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ABSTRACT

Two counselors, five teachers, four administrators, and seven 10th- and 11th-grade students at three New York schools offering pilot agricultural tech prep programs as part of the Agri Tech Prep 2000 (ATP 2000) project were interviewed. The interviews focused on the participants' understanding of and attitudes toward tech prep, the status of the ATP 2000 project, project-related issues and concerns, and the role of business in tech prep. The concept mapping process developed by Novak (1977) was used to analyze data from the semistructured interviews. None of the individuals interviewed had a complete understanding of tech prep's role. Teacher and administrator perceptions of tech prep varied by school. Although the project was considered vital by agricultural teachers, it received little support from academic teachers and administrators. Among their concerns were time constraints, policies and procedures that limit interaction, and future funding. Increased business involvement in the project was considered crucial. Student attitudes toward tech prep were mixed. They cited concerns in several areas, including lack of communication, scheduling, and program relevance. Future research/evaluation projects to address issues identified in the pilot study were recommended. (Appended are interview guides and summary concept maps.) (Contains 34 references.) (MN)

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agri tech prep 2000

A Conceptual Analysis of a Technology Preparation Program in Agriculture in Selected Schools in New York State Qualitative Study Project Report 1993-1994

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Preface

The pilot study summarized in this report was a joint effort of the ATP consortium members and cooperators. Many individuals contributed to the success of this phase of the project.

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Introduction

An individual develops in a complex environment consisting of home, school and other factors. Each subset of the environment develops and enforces it's own perception of reality and it's own unique set of norms. According to a number of theorists, learning and development is dependent upon the interrelationship of individuals and their experiences in this complex environment (Ausubel 1968; Bandura, 1986; Bronfenbrenner, 1979; Novak, 1977; Vygotsky, 1962). Based on a constructivist perspective, these authors view meaning and knowledge as being created when individuals interact with the environment. This interaction affects one's perceptions and perceptions, in turn, affect future knowledge creation.

These authors each discuss development and learning as being dependent upon the interrelationships between individuals and their experiences. The individual is seen as developing as a result of the interplay of cognition and biology with the environment. This interplay results in the construction of knowledge and creation of meaning and in resulting growth and development. Knowledge is created through the construction of concepts or symbols which are used to describe one's experience. The relevant experience is perceived and these perceptions, in turn, are a result of experiences and are unique to each individual. The role of perceptions in making meaning out of one's experiences, developing concepts or symbols to describe these experiences and constructing knowledge with the use of these symbols are common between theorists. The degree to which the authors emphasize the role of biology as well as to the types of symbols which are utilized in knowledge construction differs. However, all theorists emphasize the role of the environment in the development of perceptions and the relationship of these perceptions to what is learned.

This theoretical background was used to frame the research. As a result, emphasis is on the elucidation and identification of perceptions of school, learning, subject matter and the home environment through qualitative interviews. Additionally, teachers, administrators and guidance counselors were asked for their perceptions of project implementation and aspects of the educational environment which might affect that implementation. [1]

Based on Ausubel/Novakian theory (assimilation theory), an educational tool called concept mapping was developed to represent a hierarchical knowledge structure. (Novak, 1977). Although differences exist between the theories of Ausubel/Novak and Bandura, Bronfenbrenner and Vygotsky, all theories discuss the need for symbolic construction of meaning. Assimilation theory provides the only explanation of how that construction can be represented in a visual form to facilitate analysis. Concept maps allow for visual representation of the knowledge structure and are the primary analytic tool in this study.

The agri-tech project in New York State provides technical preparation for secondary and post-secondary education and careers in agriculture. It's primary purpose is to link the high school and post-secondary curriculum. This should enable students to graduate from high school ready for a career in agriculture or prepared for a college program in agriculture. The project consists of three two year agriculture colleges and twelve pilot schools throughout the state. Schools and colleges were chosen to represent

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1 Parts of this text are taken from a previously published document (Sutphin and Newsom-Stewart, 1993).

a variety of geographic areas, student populations and degrees of experience in agriculture.

A framework for evaluation of a tech prep project was developed and used to guide the evaluation of the agri-tech prep program in New York State. The guiding framework was provided by the Context, Input, Process, Product model (CIPP) developed by Stufflebeam (Stufflebeam and Shinkfield, 1985) and described in depth in previous work (Sutphin and Newsom-Stewart, 1993).

The CIPP model focuses on the development of a process to provide continuous feedback on a program as it is being implemented. The model describes four types of evaluation necessary to develop an understanding of the program. These are evaluation of the institutional context for the program, evaluation of inputs into the system including resources, strategies and procedures for feasibility and relevance, evaluation of the processes involved and finally, evaluation of the product. Product evaluation may include comparison of program objectives to desired outcomes.

Based on this framework, an evaluation process was developed. The process used mixed methods as a means of triangulating and clarifying results and to extend the breadth and depth of findings (Greene et al., 1989). According to Greene, mixed methods are also appropriate when it is desired to use the results of one method to develop another or to discover new frameworks or perspectives on one method using the results of the other. During this research process, mixed methods helped achieve these goals. Development and use of a survey questionnaire were reported previously (Sutphin and Newsom-Stewart, 1992). Qualitative interview questions were developed to enhance and add depth to quantitative results.

To initiate the development of the qualitative components of the process, a pilot study was conducted during the Spring of 1993. Interviews were designed to obtain more in-depth information on student perceptions (context evaluation) than possible using quantitative methods. Additionally, context, product and process evaluation were conducted through interviews with teachers, administrators and guidance counselors in the pilot schools. Stufflebeam describes continuous interaction with project staff as being critical to process evaluation. Interviews assisted in providing this interaction.

Purpose of Study

The purpose of the pilot study was to obtain in-depth understanding of perceptions of students, teachers and administrators at three pilot schools. Specifically, in order to plan ATP program implementation strategies, information will be utilized to assess factors in the school environment which may affect project implementation and to evaluate the process and context of the implementation in the pilot schools. Additionally, results were used to refine the research questions and develop a final interview instrument for use during fall, 1993. These results supplement the quantitative analysis of project evaluation and bring in input and product evaluation and examination of theoretical learning paradigms.

To achieve a broad understanding of individual perceptions, two separate interview guides were developed. One guide was used to examine perceptions of learning by tenth grade students. Another interview guide was used to elicit information on perceptions of the status of implementation of tech prep from educators at all levels of the high school system.

Research Questions

Educators

Focus Question

What are the perceptions of project staff concerning the status of implementation of the tech prep program?

SubQuestions

What are staff views concerning the role of the ATP project?

What policies or procedures hamper implementation of the project?

What are perceptions of the status of implementing the ATP project? Including reaction of school personnel to the program and to the role of agriculture?

What are the views of educators concerning the role of academic and agriculture teachers in the project?

Students

Focus Question

What are the perceptions of tenth grade students concerning learning and the educational environment and how are these perceptions developed?

SubQuestions

What are student perceptions of the school environment? In particular, factors which affect student learning such as teachers, classes, scheduling and safety.

What factors encourage learning in tenth grade students?

What is the student perception of agriculture?

How do students perceive the connection between their education and their future?

How do students perceive the integration of academic and vocational courses?

What are student perceptions of their future career, academic and personal life?

Where do student perceptions come from? Where do students gain information needed to plan for their future?

Methodology

Since a constructivist theory of epistemology was used to frame the evaluation process, research designed to answer these focus questions followed a qualitative framework (Lincoln and Guba, 1989). The purpose of naturalistic inquiry is to understand an event, not to test a hypothesis (Patton, 1990). Inquiry was therefore designed to be naturalistic and non-manipulative. Using methodologies for qualitative

research, analyses were inductive and explored open questions instead of testing deductive hypothesis. Multiple perspectives on the issues were obtained from different levels of the project including teachers, students, guidance counselors and administrators.

Sampling Procedure

Interview schedules were designed to include diversity among respondents. To provide rich data to answer the research questions, purposive sampling was used to select respondents. The final samples were as follows:

Educators

2 guidance counselors, male
3 agriculture teachers, one female, two males
3 non agriculture teachers, male
2 superintendents, male
2 principals, male

Total: 12

Students

3 females, all sophomores
4 males, 3 sophomores and 1 junior

Total: 7

Instrumentation

The interview schedules were developed following the recommendations of Patton (1990) and Guba and Lincoln (1989). Questions were developed to obtain a broad understanding of issues facing project implementation. A semi-structured interview guide was used to assure consistency in questions and to encourage participants to answer within the theoretical framework. Open-ended questions were asked on a wide range of topics. This facilitated the identification of potential barriers to implementation and minimized bias. Possible probes were included on the interview instrument. A number of transitions were also included to assure the smooth flow of the interview process. Multiple perspectives on the issues were elicited. Additionally, questions were reviewed by a panel of experts to minimize bias and assure credibility. The majority of questions had also been used in previous research and shown to be successful.

Credibility in qualitative research is enhanced by the use of a trained researcher. All interviews were conducted by a researcher trained and experienced in qualitative inquiry. The investigator sought to maintain neutrality and to minimize leading questions. The investigator had a firm belief in the paradigm of qualitative inquiry. These evaluator characteristics are crucial to the credibility of qualitative research.

Additionally, since qualitative inquiry can be affected by factor patternings, a variety of steps will be taken in the larger study to aid credibility. These techniques will include peer debriefing, negative case analysis and member checking.

Data Collection Process

Each school in the project has a designated primary contact. The primary contact is generally either the school superintendent or the agriculture teacher. Initial contact was made with this individual and was designed to gain permission and build trust. To facilitate communication within the school, the primary contact arranged for interviews with other educators and students. Interviews were conducted in a location decided by the respondent. In the case of educators, interviews were generally held in the respondents' office. In some cases, individuals were interviewed individually. In schools having a strong team approach to the project, the entire tech prep team was interviewed together. Students were generally interviewed in pairs. This was useful to minimize nervousness and encourage communication between the interviewer and the respondent. The agriculture teacher at one school was not available during the interviewer's visit to the school. A telephone interview was conducted with that individual at a later date.

The interviews provided in-depth data. Interview length ranged from one half to one hour. Questions were primarily open-ended and time was given to allow respondents to think about the questions before answering them. Following the recommendations of Patton (1990), transitions were provided during the interview. Member checking also occurred throughout the interview when the interviewer would summarize what she heard the respondent saying and then ask, "is this what you mean?" When respondents gave permission, interviews were audio taped. In the majority of cases, this was not a concern. One respondent requested that the interview not be taped. Additionally, the telephone interview was not taped. In these two cases, detailed notes were taken and analysis proceeded from these notes.

The semi-structured interview guide was chosen because the research problem was defined, the parameters were established and the research framework was conceived. Additionally, the questions were consistent. Interview guides and conceptual frameworks are found in Appendix A.

Data Analysis

All data were analyzed using the concept mapping process developed by Joseph Novak (1977). As discussed in previous work (Newsom-Stewart, 1993a), concept mapping is an analytic tool based on principles of educational theory (Ausubel, 1968). Concept maps were developed to represent a conceptual knowledge framework (Novak, 1990). The knowledge framework is hierarchical and concepts are linked by lines with linking words (propositions) to create valid statements. The resulting map can depict the knowledge structure of individuals which they use to perceive and make meaning of experiences. These maps are useful in identifying people's misconceptions (Helm and Novak, 1983; Novak, 1990) and representing the knowledge held by a group of individuals in an organization (Newsom-Stewart, 1993). Concept maps are useful for conducting a systems level analysis such as that used in the CIPP model. In particular, product evaluation is facilitated through the use of concept maps to represent the knowledge structure of the organization concerning implementation, process, and context.

Preliminary analysis consisted of the construction of a concept map for each interview. This analysis answered the question of what does the individual know about the issues addressed. The analysis and interpretation phase incorporated information from all respondents. Educator and student interviews were examined separately. It was during the analysis and interpretation phase that final results and conclusions were developed. Summary concept maps were developed to answer the question of, what do

tenth grade students in the ATP project know about how they learn and what do educators in the ATP project know about the status of the implementation of the project.

During the data interpretation phase, summary concept maps were developed for educators concerning the role of ATP, the status of implementation and issues and concerns. The maps show a variety of terms which individuals felt were unclear. Therefore, maps were constructed for each of these terms separately. Conclusions were constructed separately for educators and students. Schools were coded as A, B and C. Data were summarized for each school. Concept maps can be found in Appendix B. In addition, a synthesis of all schools portrayed the collective views from pilot schools.

Findings

All findings emerged from the comments and insights of participants. Two different interview guides were developed and utilized, one for educators and a separate guide for students. Results will be presented in this context.

The sample of educators consisted of agriculture and academic teachers, principals, superintendents and guidance counselors. Questions focused on five primary areas. These include perceptions of the role of the ATP 2000 project, the status of project implementation, issues and concerns, the role of business in tech prep and school perceptions of tech prep. Results will be discussed for each area separately.

Since this study was designed as a pilot study, information should be interpreted in this light. Further studies will be conducted to increase validity and reliability of findings and facilitate data interpretation and generalization.

Educators

Role

Participants appear to have a varied understanding of the role of the organization. As shown by the summary map in Appendix B, the conceptions focus on two areas; student education and organizational structure. Educators felt that student and faculty empowerment, development of interdisciplinary knowledge, commitment and awareness are important issues. The question of whether students or faculty are the learners is not resolved. The goals require involvement and experience. Again, the nature of involvement and experience is not clear. On an organizational level, participants felt that the role of the organization was to act as a bridge from high school to college and to achieve communication between project staff.

None of the individuals interviewed had the complete understanding of the role represented by the map. Role descriptions include:

> To give more scientific theory to students as part of high school preparation.
>
> To give exposure to many different areas including vocation, environmental and agriculture in order to create experience and act as a bridge.
>
> Expanding the base of career opportunities for youth.

Individuals describe the role of the project differently. In order to examine the source of these differences, the meaning of terms used to describe the role was analyzed.

Communication. Communication is critical to the development of awareness. This requires sharing concerns, stories and successes. A number of suggestions were given as to how communication could be achieved. Dialogue was viewed as critical. Other components necessary included clarified expectations, teamwork, the inclusion of teachers to add legitimacy, the importance of communicating with students, high schools and colleges, the importance of clarifying and communicating end goals of the project, the need for a good public relations program, the need to schedule meetings, the inclusion of feedback from colleges to high schools, and the importance of interaction. Communication was viewed as critical to the development of a true partnership involving mutual respect and requiring flexibility.

Issues that need to be addressed include improving communication and meeting participant expectations. Clarification of end goals of the project (the role) and explication of the types of feedback might be most useful.

Bridge. One role of the ATP project is developing a bridge from high school to college. Participants had some understanding of what might be entailed. However, the researcher was unable to develop a definition of a bridge from participant comments. Generally, a bridge was viewed as providing a path from high school to college. This necessitates team teaching, modeling and integration of subject matter. This integration was seen as increasing experience, an integral component of the bridge. Experience in turn, was considered necessary to create interest.

Issues to address include the definition and clarification of the concept of a bridge. This clarification will help clarify the end goals of the project, one of the concerns of participants. Clarification should include the meaning of the concept, how it can be achieved and how one knows when it has been achieved. This clarification should help participants focus on the goal, increase motivation and commitment, facilitate project evaluation and increase the ability to share perspectives. This should increase understanding and communication.

Involvement. Involvement is a critical component of the project. A good understanding of the term was indicated. Educators defined involvement as increasing knowledge, facilitating the sharing of information, and increasing experience. Achievement will be accomplished through teamwork and interaction. Involvement included encouraging teachers to dream and thus assisting in the development of commitment and trust. Educators felt that the community, including businesses should be involved in the project. The role of student involvement was not clarified.

Future research could include the role of student involvement. The focus could include how student involvement can or should be increased in the tech prep program, in business, in decision-making, in education and in learning.

Commitment. Commitment of staff is critical to the successful completion of project goals. However, there was limited explanation of the meaning, strategies for achievement or criteria for assessment. Also, the need for commitment by students was not addressed. Educators perceived commitment as emerging from sharing knowledge, interaction and ownership over the program.

Unresolved issues include clarification of meaning and purpose as well as achievement and evaluation strategies. In particular, the need for commitment of students to their own learning and to the ATP project requires clarification.

Knowledge. Knowledge has meaning which should be given to students according to some educators. Others felt that knowledge should be developed through shared experiences and perceptions between students and teachers. Thus, there is a split educational paradigm. The top down description "teachers give knowledge" is at odds with the emphasis which educators place on their own participation in and need for equal interaction in order to learn and develop commitment. Additionally, a variety of learning theories describe meaning as being created and as being dependent upon sharing of information and ideas (Ausubel, 1968; Novak, 1977; Vygotsky, 1962; Bandura, 1986). "Giving" information does not insure that the knowledge which is constructed from that information is what was intended. Another explanation is that educators see a time and place for both paradigms, thus, there is no contradiction in competing philosophies.

Research should clarify the way in which educators view knowledge as developed, created or shared. The role of the student in the educational process also needs clarification. A shared understanding of the meaning and role of knowledge is crucial to the success of the ATP project as well as to successful evaluation of project efforts. Otherwise, how one would know when knowledge has been achieved?

Empowerment. Empowerment is a project goal. However, the meaning, and strategies for achievement and evaluation are vague. Educators describe student empowerment as "helping them buy into what we are doing". The role of empowerment of educators is unclear. Since the project emphasizes experiential learning, empowerment of individuals to participate and make meaning from experiences is important. A clear meaning of empowerment and it's role in the project is critical. For tech prep to successfully achieve the bridge from high school to college, students must be empowered to make choices about careers and education. Empowerment is necessary for commitment, trust, decision-making and problem solving. These are all goals of the project and have been identified by both teachers and students as being necessary for learning.

Further research on the meaning of empowerment for both students and teachers is needed to meet goals of the ATP project. Research on the role of empowerment according to stakeholders will enhance the success of the project.

Experience. Participants understand the role and need for experiential education in the ATP project. The real life context is viewed as critical to provide students a place for meaningful learning. The "bridge" provides exposure. Necessary experience include community service and apprenticeships and is key to the creation of a new outlook on agriculture and a realistic picture of the world. Interdisciplinary projects increase experience, generate enthusiasm and model integration therefore increasing involvement of students and teachers and enhancing communication and commitment.

Learning. There was limited discussion of the role of learning in the ATP project. However, the need for students to know and understand their situation was emphasized. This knowledge cannot be developed without learning, necessary for empowerment and successful achievement of a bridge and emphasized by students as critical to education.

Research should delineate perceptions of the role of learning in the ATP project, its meaning and strategies for achievement and evaluation. This understanding is critical to successful development of a bridge. A shared understanding between students and teachers is critical to successful student learning and project success.

Trust. Trust is needed to develop commitment and was described as necessary for dreaming and development of creative solutions. However, there was limited

description of the meaning or strategies for achievement and evaluation. Additionally, there was no mention of the role of trust in learning or communication. Students however, described trust as critical to learning. Trust is also critical to successful bridge development.

Research should clarify the role of trust in the ATP project including the meaning according to educators and students as well as strategies for achievement and evaluation. A focus should be on role of trust in learning and development of commitment and empowerment, necessary for achievement of project goals.

Implementation Status

Project implementation has been going "as well as can be expected" and is "well on the way". Implementation required commitment and ownership by all parties and could be improved by an increased understanding of project goals and role. Improved communication and involvement is critical.

Specific concerns include the need for assurance of continued funding. One superintendent felt that:

> Unless teachers and administrators know that the funding is not going to dry up like EAP and Compact for Learning, the support just will not be there.

This was especially true of guidance counselors. Guidance counselors "control the kids" and their support is critical. The attitude of guidance counselors is considered to be dependent upon teacher attitudes.

Issues and Concerns

A primary concern is the lack of communication within the project. This was attributed to top down decision making, lack of leadership, and inadequate stakeholder interaction.

Lack of communication results in a limited stakeholder understanding of the ATP project. Suggestions for improvement include scheduling meetings in advance and increasing project leadership in meeting coordination. An example was given by one agriculture teacher. He suggested that project leaders determine the time and place of meetings, inform personnel that they must attend, provide funding to pay for substitutes and travel, and then allow the teachers to interact and develop ideas. Teacher ownership could be encouraged by asking the teachers to give reports, develop priorities and goals, and decide on issues which should be addressed at each meeting.

Problematic structures include split lunches for staff, tracking, regents requirements, space limitations, a 42 minute period and a nine period day. These structures are described as limiting project success and hampering development of life experiences, internships, apprenticeships and team teaching. Heavy mid-year testing further confounds these difficulties. Structures with a less severe negative impact include split bussing, insurance for work and internship experiences and teacher contracts.

Educators are concerned about the focus on the eleventh and twelfth grades and feel that career preparation should begin in the middle schools and include businesses.

Role of Businesses:

Business input is considered critical to project success. Some educators feel that businesses should be involved in the planning stages. Others consider this to be putting the "cart before the horse" and that it is more appropriate to elicit business input after curriculum development. In the words of a team of teachers, businesses should be approached with:

> This is our curriculum and this is how we feel you can contribute to it.

Suggestions emphasize obtaining information relevant to curriculum development at a local level in a standardized manner. One individual suggested that interviews and/or surveys be developed by the project and then incorporated into the curriculum. Students could conduct surveys and/or interviews. Additionally, one school has a successful business organization which participates in school decision making and planning.

Involving businesses should increase community involvement and support agricultural business. Suggestions include internships, apprenticeships, adjunct faculty and speakers. Development of an alliance between schools and businesses was emphasized. This alliance will develop program legitimacy in students and educators. In one case, this alliance was described as including school input in business hiring practices.

Internships and apprenticeships were considered theoretically important but practically difficult. Concerns include the need for transportation, insurance and adequate school personnel and finances. Some individuals remarked that since needs have been clarified at a national level, additional input is unnecessary. A distrust for business was also expressed. In the words of a superintendent:

> It is a myth that they can tell us what to do to train kids that we don't know already. Businesses can talk a good game but they don't walk the talk. They don't have the time and they don't come through with the resources.

He suggested that this difficulty be resolved by providing tax breaks to businesses. This would result in students being viewed as part of the overhead and as an accepted part of the operation. In that sense, the apprenticeship system would be similar to that in Germany.

Perceptions of Tech Prep

Perceptions differed by school.

Educators in one school feel that the project was important. There is a tendency to view it as "one more thing" which results from heavy teacher commitments. To develop teacher trust, commitment and ownership, it is necessary to prove that funding is secure and to provide funding for project meetings. One administrator suggested that after ownership of the project was at the school level, funding would no longer be necessary.

Educators in another school feel that the project is critical and an integral part of the school environment. A team of teachers is established and working interactively to develop the curricula and team teach. Teachers have control and ownership over the project and are supported by the administration. The principal has changed the school

schedule to allow individuals involved with the project to work together. Two team taught courses are being developed for introduction during the fall semester. Teachers describe the School Board as:

> Giving us everything we want, they know how important it is.

Money and commitment are not considered to be difficulties in this school.

Individuals in a third school feel that the project is viewed as, in the words of a guidance counselor:

> One more thing we have to do.

The project receives little support from administrators or non academic teachers. Implementation has barely begun. The agriculture teacher describes himself as:

> I haven't thought about team teaching a course.

This is attributed to a lack of ability to do anything innovative due to the perception of the ATP project. The reaction of the school to the project is described as:

> Willing to accept it as long as there is no energy required. They won't make compromises or do anything to make sure it is achieved.

Role of academic and agriculture teachers

The agriculture teacher should tie education into the real world and address misconceptions on the role of agriculture. These include job opportunities and the image of farming. One educator felt that the agriculture teacher should instill a work ethic into students. In his words:

> These students don't have to work. You can't intrigue them if it requires time and effort. Work ethic needs to be in the school system!

Interdisciplinary teaching is described as necessary to provide a theory to vocational education. The theory includes mathematics and science and is a critical component of high school preparation. The role of an industrial arts teacher is to "share his knowledge with students, design curriculum and tie the project into business needs". A science teacher feels that his role is to give the direct meaning of science to students and encourage science as a life pursuit.

Students

Interviews were conducted with tenth and eleventh grade students and elicited information on perceptions of the school environment, the role of education and sources of information for career and educational planning.

School Environment:

Teachers. Good teachers are willing and able to explain the process involved in learning and are supportive of and patient with students. Good teachers listen. As one girl suggested:

> They make sure you understand even when you say you don't.

The ability to listen is necessary to share stories and knowledge and enhance learning. Good teachers encourage the creativity critical to learning. Good teachers are motivated and can motivate students because, in the words of one girl,

> They remember what it is like to be young and immature and make us feel that that is OK.

A key factor is respect for students. Most students feel that respect encourages trust and commitment of both teacher and student. Good teachers respond to students' need to ask questions, make choices, prepare for the future and take on responsibility.

In contrast, less effective teachers put students down verbally in class. The effect of a put-down such as "You're dumb" was described as humiliating students and preventing them from asking questions. Less effective teachers have limited commitment to students and give up when presented with difficulty. One girl described a situation in which she felt put down by a math teacher and began to act up in class. The teacher responded by putting her and a friend in a separate room for the remainder of the semester. When asked what the teacher could have done differently, she responded:

> He could have worked with me, sigh, not just give up!

Most students had experienced both good and less effective teachers.

Classes. Good classes are described as those in which students can do things, show progress and do group work. Students describe less effective classes as boring. The quality of a class depends on the teacher. Most classes were described as teaching "nothing new", "too easy" and "not helpful to the future." Exceptions included classes which have a direct relationship to future work or career.

There is some integration of subjects. Social studies is perceived as related to English and biology and math are often linked.

Scheduling is problematic with respect to students ability to explore class offerings and obtain work or practical experience.

School. School is unanimously disliked by students in this study. One girl described her feeling toward school as:

> It is there, just something you do.

A number of students describe school as "boring". As one boy said:

> There is so much home work, so much lecturing. In school time is wasted. In one period you get twenty minutes of knowledge and 30 minutes of waste!

Most participants feel school is not worthwhile. The lack of interest is due to the perceived lack of relevance for the future. As one student mentioned:

> It doesn't help you better yourself for the future, which is the real world. There has to be cooperation between people, not like in school.

Criticisms include boring classes, too much homework, not enough productive time, too many lectures, and in and out of school drug and alcohol use. The availability

and use of drugs in school is problematic. Students feel that the real world requires cooperation not modeled or taught within the school system.

Reasons students liked school were linked to the social situation, not to academics. The availability of friends and supportive people is crucial to development. School also gives students "something to do."

Role of Education

Concepts used to describe student education include learning, commitment, trust and experience. These terms describe the role of education. The same terms are used by educators in describing the ATP project.

Learning. Learning is encouraged when education is related to real life. This requires experience and exposure to work. Students perceive the link to work as necessary. In the words of one girl,

> You can see that you can do it!. It shows you can achieve something, gives you motivation. What you do, what you've made, will always be there.

She described the creation of a pole barn. The creation led to pride and a realization that "you can do it". This realization increased motivation and responsibility and enhanced learning.

Trust develops responsibility, "makes you feel good" and encourages learning". Learning requires shared stories, communication and creativity and "makes you feel good" because it "helps you understand the world." Understanding is necessary to make choices. Communication is critical to learning. However, learning styles differ and could include hands on activities, observation and listening.

Commitment. Students describe commitment as necessary for teaching and learning. Commitment is described as requiring respect for students and stemming from motivation. Motivation requires creativity and enhances individuality.

Trust. Trust is described by students as requiring belief in students, encouraging learning, understanding, responsibility and communication and "making you feel good". Trust is shown by treating students as individuals and not "treating the whole group as one".

Experience. Most students believe that experience centered learning should be mandatory in schools, model real life and require doing. This enables students to be able to:

> See how you can use it
>
> See how you can achieve something.

Experience requires exposure to the real world and is necessary to encourage change. Job placement during high school is critical for the future so that students can, as one boy suggested:

> Know where you want to be.

Job placement was described as intimidating and difficult for students due to travel and financial constraints. As one girl said:

> We just can't do it alone.

Sources of Information

Information is used to develop perceptions and create knowledge. Academic and career planning is based on existing knowledge. Students want to plan based on interests, future goals and real life.

Information is obtained through communication. According to students, teachers who are trusted are the primary source of information. Parents are often described as not affecting students' choices. In the words of one girl:

> They don't affect anything I do. They leave me alone and I leave them alone.

However, perceptions are learned from experience, including parental attitudes and values. An example described by one girl is :

> I used to look down on agriculture since my parents and friends frequently joke about it.

Other sources of information are people who have done the task in question, including friends and guidance counselors. However, guidance was frequently not trusted and described as "often a waste of time".

Conclusions

As mentioned earlier, this project was based on the CIPP model for evaluation. Questions were tied into a previously administered survey questionnaire.

Context

Stufflebeam (Stufflebeam and Shinkfield, 1985) describes context evaluation as defining the institutional context of the project, identifying the target population and assessing their needs. Additionally, a complete evaluation should identify opportunities for addressing needs, diagnose problems which create needs and judge whether objectives are adequate for needs. Since the target population is the middle 50% of tenth grade students, this discussion will focus on their needs as described in this research.

Student Needs

Communication. Communication and interaction with teachers and students is critical to learning and should be incorporated into class and real life settings. This idea should be extended into ATP project planning and curriculum development.

Scheduling. Students felt scheduling was problematic and prevented them from taking courses they were interested in. Scheduling should be made less rigid to allow students more flexibility in decision-making and experience. Educators and project planners should explore models which would enable students to achieve flexibility and meet necessary standards.

School. School was not viewed as being a positive experience for the majority of students in terms of being important for the future or related to the real world. Project teaching, education and research must focus on sharing the integration of academics to the real world. Additionally, the school environment involves drug and alcohol use among a good proportion of students.

The social network found in schools is a positive factor and could be utilized to alleviate existing problems. Use of the social network could include creation of peer groups or a 'big brother/big sister' network in education. These networks are presently being developed by Cornell University (Hart, 1993) to improve the residential experience for undergraduates. Implications of social networks should be explored further by the ATP project.

Learning. Learning in real world settings is important to students and should be incorporated into the educational experience in a successful ATP project.

Commitment. Student and teacher commitment to education is critical to learning. ATP project initiatives should explore efforts to increase commitment in educators and learners.

Trust. Students need to be trusted to learn well. Trust encourages creativity, communication and facilitates empowerment. Evaluation and research efforts for tech prep should share this need with educators and administrators and evaluate ways in which more trust can be achieved.

Experience. Students need experience in real world settings. Job placement is one way of accomplishing this experience. Opportunities for experiential education should be explored further.

Problems

Time constraints of teachers. Future research should address constraints, including 5 to 6 periods per day of teaching, intense committee obligations, inservice needs for new educational initiatives and preparation time.

Policies and procedures which limit interaction. Problematic policies include split lunches, a nine period day, tracking, a 42 minute period and minimal discussion time. The extent of the effect of policies on project implementation should be explored further.

Limited understanding of project role. Educators and project planners appear to have an unclear understanding of the need for and means of achieving empowerment, respect and trust with respect to ATP. A better understanding would result in teacher and student empowerment, improved communication within the project and increased learning at all levels. Future efforts must develop and share meanings and strategies for achievement and evaluation.

Understanding of the nature of knowledge and means to knowledge creation is unclear at all project levels. Confusion over the appropriate paradigm of education exists. Future efforts should increase awareness of the role of learning in the ATP project and develop a shared understanding of the meaning and appropriate strategies for achievement and assessment. Without this understanding a successful experiential education project such as ATP cannot be successful.

Scheduling and practical constraints. Constraints which minimize teacher ability to provide experiential education include limited knowledge and opportunities for appropriate techniques/abilities to increase integration of academic materials and real life. Limited experience team teaching is also a problem. Future efforts should increase opportunities for team teaching and awareness of appropriate methodologies.

Administrative and guidance support. A vague administrative understanding of the project role and the importance of experiential education is limiting opportunities for project implementation. Further research and evaluation should focus on increasing administrative and guidance counselor awareness and building support for the project.

Input

Input evaluation is designed to identify the capabilities of the system, alternative strategies for achieving project goals, and development of procedures appropriate for implementation. Evaluation is achieved by analysis of available resources, strategies and procedures for feasibility and relevance.

Funding

Funding limits project success. Substitute teachers, travel money, overtime and weekend work, materials, and personnel are necessary for apprenticeship or internship opportunities.

School Commitment

Teacher and administrative commitments to the project in terms of time, money and scheduling flexibility are inadequate in two of the three schools visited to allow project continuation after funds are depleted.

Communication

Appropriate communication strategies are not yet in place to assure project success and must be developed and implemented.

Process

Process evaluation is designed to critique the processes involved, to provide information to decision makers and to record and examine project related events and activities. In particular, this can be achieved by continuous monitoring of potential barriers to project success and awareness of unanticipated barriers. Additionally, the process must be described and staff interacted with. This project focused on the identification of barriers to success. Identified barriers are listed below.

Role

Participants do not have a clear understanding of the role of the project. In particular, what constitutes a bridge between high school and college needs clarification.

Communication

Communication is inadequate between high schools and colleges, between teachers within and between schools, and between educators and students. Improved communication is critical for project success.

Involvement

More teacher and business involvement in the project is necessary. Improved communication should assist this effort. The role of student involvement in business and experiential education programs should be probed further.

Commitment

Lack of teacher and administrator commitment and ownership is a major concern to project success.

Learning and Trust

Educators and students perceive a lack of trust from others in the project in terms of not being given sufficient responsibility, ownership or respect over the project and/or their own learning. Future efforts should encourage trust and learning in teachers, administrators and students. Efforts to increase communication, commitment and ownership will encourage trust and develop an alliance between educators, administrators, businesses and project planners and between educators and students.

Implementation Status

Guidance counselors and administrators have not been a large enough part of the project. They are critical for project success.

Time Constraints

Meetings need to be scheduled far in advance. Project planners should take leadership in scheduling and provide opportunities for teacher ownership over the meeting agenda.

Problematic Structures and Policies

Split lunches for staff, tracking, space limitations, 42 minute periods and a nine period day, and the need for heavy mid-year testing schedules make interaction difficult.

Role of Business

Differences in opinion exist concerning the role of business and the time that business should be incorporated into the project. Potential business roles include assistance in planning project activities, providing internships and apprenticeships, and acting as school resource persons and adjunct faculty. Potential restrictions include travel, finances, and limited businesses in the local area. These areas should be probed further.

Perceptions of Project

Perceptions of the project ranged from extremely positive to quite negative. Differences are linked to degree of teacher ownership and extent of administrative support. Results emphasize the need to increase understanding of project role and build commitment in educators and administrators.

Role of Teachers

Perceptions of the role of agriculture and academic teachers varied according to school and status of implementation. Further work needs to be done as curriculum is implemented.

Product:

Product evaluation requires identification and description of desired outcomes and relating these outcomes to program objectives and information from other evaluation processes. This project identified the following desired outcome.

Development of a bridge

A bridge describes the transition from high school to college or work experience: Based on an analyses of respondent comments, insights and concerns, the qualities needed for successful bridge development include the following:

Student and teacher outcomes :

a. Learning
b. Empowerment
c. Knowledge
d. Experiential Education
e. Development

Structural outcomes:

a. Articulated curriculum
b. Communication
   - Increased opportunities for interaction
   - Increased trust, commitment and understanding between groups
c. Supervised or self-directed work and college experiences for students
d. Integration of academics and real life
   - Team teaching
   - Cooperation between students and faculty
   - Interaction
e. Altered school structure, potential change areas include:
   - 9 period day
   - 42 minute period
   - Extensive school requirements
   - Mid year testing requirements
   - Bussing schedule

f. Feedback from colleges to high schools including student achievement, needs and curriculum articulation
g. Community and business involvement.
   - Apprenticeships
   - Internships
   - Adjunct faculty
   - Business speakers
   - Job placement
h. Student participation

Discussion and Recommendations

In order for a bridge from high school to college to be successful a variety of structures must be in place to allow the transition. Additionally, students and educators must have a number of characteristics which will allow the use of available structures. These characteristics include knowledge of career and education choices, sufficient self awareness to make appropriate choices and the ability to examine future choices, relate these choices to needs and make a decision. Thinking and problem solving skills are critical as is knowledge of self and the environment. Additionally, faith and understanding in one's knowledge is necessary to allow appropriate action. The literature has shown that empowerment is a relationship based on trust (Kowalski, 1989). Trust must exist in teachers and students for empowerment to occur. Without this trust a successful bridge cannot be developed.

Empowerment of students and educators is critical to the successful development of a bridge and should be a project goal. Since empowerment is linked to learning in individuals and organizations (Brooks, 1990; Novak, 1977; Carr, 1991; Senge, 1990) the role and meaning of learning must be examined further. At a conceptual level, and in line with the theoretical framework of the study, the development of students and teachers is crucial to successful development of a "bridge" and successful transition to career and college. The organization must also be empowered to learn about itself. As emphasized in the CIPP model used to frame this study, this requires development of a process which can be utilized by project personnel to obtain appropriate information and integrate that information into it's knowledge structure in a meaningful fashion.

Additionally, research has shown that the development of problem solving skills which can be applied to many aspects of a person's life cannot occur unless that person is able to construct meaning and learn to learn (Ausubel, 1968; Novak, 1977; Bandura, 1986; Vygotsky, 1962). This contention is supported by Mezirow (1990). When an individual or organization develops the ability to apply previously learned learning skills to new situations he or she has truly been empowered. Each new situation can be coped with more easily, with less fear or loss of control. Since meaningful learning is a creative process it enhances a learner's ability not only to learn material but to create a knowledge structure and control that creativity. This control is the basis of empowerment. Individuals must learn to learn.

Learning theories and a systems analysis can be used to identify and achieve significant outcomes required by the State Education Department. These include career development, transferable technical skills and knowledge, interpersonal skills, thinking and problem solving skills, personal and resource management, communications skills, system level understanding and integration of academics with real life.

It is necessary to ask how we should educate leaders and followers to encourage trust and communication and facilitate empowerment. What, therefore, is the role of evaluation and education in the ATP project? What types of efforts should be developed to evaluate the project, empower students and teachers, encourage learning, develop commitment and address many of the concerns raised by teachers and students in this study? Learning theory and the theoretical background used to frame the study provide guiding principles. If we can share the meaning of a "bridge" throughout the project, if teachers and students can learn to share perceptions of meanings with each other and, additionally, learn to construct knowledge and meaning, communication will be enhanced. True communication develops respect for one another as biases are identified and shared and misconceptions identified. Enhanced participation and communication should encourage mutual respect and development of ownership over the project.

Additionally, the importance of a shared understanding of vision and role is critical for success of a project or organization (Lee, 1993;, Hall, 1991; Miles and Ekholm, 1991; Moses, 1991). The ability of a project to adapt to a changing environment has also been linked to the existence of a shared vision (Hall, 1990; Kotler, 1992; Lee, 1992). This ability is crucial to a tech prep program designed exclusively to allow schools and educators to cope with the changing requirements of contemporary society. A shared vision has is critical in the development of commitment (Thompson, 1989) in project personnel.

In order to develop a shared perspective, Smallwood (1990) believes that "since commitment and shared perspective at all levels are prerequisites for successful implementation, it is critical to achieve employee input through interviews, surveys, speeches and systems analysis." These are the same requirements as Stufflebeam emphasizes as necessary for a successful process evaluation.

Participation of individuals in the vision-sharing process is necessary for successful implementation (Alexander, 1989; Mink, 1992). Similarly, learning theories emphasize the need for participation in learning and meaning creation (Freire, 1970; Belenkey, 1986; Mezirow, 1990; Novak, 1977; Ausubel, 1968; Vygotsky, 1962). Participation enhances communication, understanding and trust.

A final component of the learning process and successful project implementation is reflection. Reflection is necessary to encourage learning, critique the project role and complete a context evaluation. Reflection will allow participants to judge whether project objectives are adequate for addressing the needs of students and educators.

If a process is developed to enhance communication, encourage learning, develop commitment, clarify and share the meaning of the project role and encourage participation many of the concerns raised by educators and students could be addressed. Student concerns include communication, perception of integration of learning with the real world, commitment, learning, trust and understanding of experience. Concerns of educators in this study include inadequate support of administration and guidance, lack of ownership, communication, and trust in the project. Many of these concerns could be alleviated and further evaluated by a participatory process which could share the meaning of concepts required for successful bridge creation, reflection on the role of the bridge, and develop an improved understanding of project roles in project staff and students.

Increased communication, understanding and commitment to the project would increase the ability of the school system to deal with structural issues. Increased administrative support would increase opportunities for interaction, team teaching and

cooperation between students and faculty and minimize funding difficulties. Increased communication with community college personnel would facilitate development of an articulated curriculum, increase feedback from colleges to high schools and increase the number of educational opportunities for students. Reflection on the role of tech prep would facilitate process evaluation and assure the applicability and relevance of the developed role. Student involvement in all levels of the project could be increased through increasing administrative and guidance support and providing information on the project. Additionally, further clarification of the project role should examine the relationship between difficulties in the school structure and successful bridge development.

Based on this discussion, an appropriate methodology for evaluation of the ATP project should share meaning, encourage reflection on the meaning of the role of ATP and related concepts and encourage empowerment of the organization, it's members and it's clientele (students). Individuals should be able to delineate the role of tech prep through reflection and communication by sharing of perceived meanings. Commitment should be developed through participation and ownership in project activities. Additionally, participation over the creation of a shared meaning for the project role should encourage commitment to the project. A potential methodology will be described in the following section[2].

Future Research/Evaluation Efforts

Future research/evaluation should address issues identified in the pilot study. The theoretical framework and the CIPP model for evaluation are appropriate for evaluation of achievement of outcomes desired by the State Education Department and the ATP project. Also, the qualitative information enhances data from the quantitative survey questionnaire.

The following methodology is proposed to achieve these goals:

Phase I: Qualitative Interviews

Fall, 1993. Interviews will explore definitions of role related concepts including bridge, learning, empowerment, knowledge and experiential education. The meanings of these words according to educators should be clarified as well as strategies for assessment and achievement. Concept maps developed from interviews will depict the meaning of each term separately and will be evaluated at a latter time by project personnel. Individuals will be asked what characteristics exist in society that youth and the project must be able to cope with. Interviews will last approximately 1 hour.

Qualitative interviews will narrow and refine results of pilot study, clarify the role, improve communication, develop commitment, encourage reflection and learning, evaluate project objectives and enhance participation. Additionally, clarification of the meaning of these terms and strategies for achievement and evaluation will allow the identification of key competencies such as those required by the State Department of Education. These include career development, transferable knowledge, interpersonal skills, thinking and problem solving skills, communication skills and systems level knowledge. Concepts such as these require a theoretical description and depiction of the meaning and purpose of experiential education, knowledge, learning, a successful bridge and empowerment.

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2 Sections of the preceding discussion have been taken from previously published work (Newsom-Stewart, 1993)

The sample will consist of individuals at each of three schools, represented by region and will include at least 1 superintendent, 1 principal, 3 agriculture teachers, and 3 academic teachers. Additionally, one of the three program leaders from the community colleges will be involved.

Phase II: Quantitative Survey

Spring, 1994. A quantitative survey will narrow and refine results of pilot study and qualitative interviews. The survey should further clarify the role, improve communication, develop commitment, encourage reflection and learning, evaluate project objectives and enhance participation. The questionnaire will focus on further identification and evaluation of problematic structures and policies, participant understanding of the project role and aspects of society which affect implementation. Data will be collected on the meaning of concepts and the importance of the role of businesses. Choices of questions and definitions of concepts will be taken, in part, from pilot study and phase I results.

Conceptualization will be as follows:

Role

Terms will be taken from literature review and respondent answers from pilot study (i.e. concept map of role). Individuals will be asked to rate the importance of each characteristic to their understanding of the role of ATP.

Characteristics Needed to Achieve Role

Each respondent will be given a list of individual, school, business, community and project characteristics and rank the importance of each characteristic to goal achievement, as well as the status of that characteristic in their school on a 1 to 5 basis.

The list will be developed from pilot study information and desired State Education Department competencies and should include the following:

- Articulated curriculum
- Career development
- Learning
- Empowerment
- Knowledge
- Experiential education
- Problem solving skills
- Technical skills
- Personal resource management
- Supportive administration
- Supportive guidance counselors
- Supportive academic teachers
- Supportive agriculture teachers
- Student participation
- Business involvement
- Community involvement
- Apprenticeships
- Internships
- Work experience

- Interaction opportunities
- Communication
- Trust
- Commitment
- Understanding
- Team teaching
- Cooperation between students and faculty
- Appropriate structure:
  9 period day
  42 minute period
  School requirements
  Mid year testing requirements
  Bussing schedule
- Feedback from colleges to schools
- Adjunct faculty from business
- Speakers from business
- Job placement
- Other

Meaning of Concepts

Questions should also further probe the meaning of empowerment, learning, bridge, knowledge and experiential education. Indicators will be taken from pilot study results.

Societal Environment

Participants will be asked to rate the importance of various societal characteristics to project success or failure.

Type and Importance of Business Involvement

Participants will rate perceptions of the importance and feasibility of various types of business and school interaction (2 questions). Terms will be taken from pilot study interviews and could include the following:

- Internships
- Apprenticeships
- Input in Planning
- Adjunct Faculty
- Speakers
- Input in Curriculum Development
- Job Placement
- School input into business hiring practices

Approximate time for completing the survey questionaire is one half hour. The sample will include individuals at all levels of the twelve pilot schools and three community colleges including teachers, administrators, students, and guidance counselors.

Phase III: Development of a Bridge

Spring, 1994. The purpose of this phase of evaluation is to increase communication, learning, understanding. trust, and reflection of project personnel and to

enhance understanding between administrators, teachers, guidance counselors and students. The development of a bridge component of the study will continue to address concerns identified in pilot study. The process will provide a visual representation and summary of role of project and further evaluate the context of implementation. Visual representation can be used to share the status of project implementation and perceptions of role between and among schools, colleges, government personnel and students.

In a focus group, individuals from each region in the state will critique and examine definitions prepared in the earlier qualitative interviews and select maps best representing their definition of the terms. Focus group participants will include the agriculture teacher from each school, the program leader from the region and students and/or administrators. A tentative plan limits the size of the focus group to seven. A group concept map can be developed from terms provided in this research and from the State Department of Education requirements. These terms might include the following:

a. Learning
b. Empowerment
c. Knowledge
d. Experience
e. Development
f. Articulated curriculum
g. Communication
h. Work
i. College
j. Team teaching
k. Cooperation
l. Interaction
m. 9 period day
n. 42 minute period
o. Mid year testing
p. Businesses
q. Students
r. Teachers
s. Administrators
t. Colleges
u. High schools
v. Trust
w. Commitment
x. Career development
y. Problem solving skills
z. Interpersonal skills

Concept maps for each region will describe a vision of a "shared role" for that region. Participants will be asked whether this role will allow the organization to meet it's objectives and deal with environmental characteristics identified in the interviews and the survey questionnaire. (process evaluation). The focus group will be asked how the project will be institutionalized to carry on without project funding. The overall evaluation process should encourage reflection and provide a visual picture to project staff and evaluators. The focus will be on what the project is trying to achieve and issues the schools in the region are dealing with.

Additionally, maps developed for each region can later be shared between regions, other educators and personnel and continue to enhance communication,

encourage reflection and share meaning. The researcher will combine maps developed by focus groups to develop a visual representation for the entire project.

The focus group will consist of the program leader from a community college, agriculture teachers from each school in the region, and possibly administrators, non academic teachers and/or students. The final sample will be dependent on availability of participants. The final research design will emerge as the study develops. The approximate time is 2 hours.

Further research/evaluation efforts should also be developed to assess the curriculum, determine if students math, science and communication skills are improved and to plan a simple procedure for assessment that can be used by schools after project funds are gone. These efforts have not been a part of this research design and must be considered further.

Bibliography

Alexander, J.W. (1989). Sharing the vision. Business Horizons, 32, (3), 56-59.

Ausubel, D.P. (1968). Educational psychology: A cognitive view. New York: Holt, Rinehart and Winston.

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Prentice-Hall, New Jersey.

Belenky, M.F., Clinchy, B.M, Goldberger, N.R., and Tarule, J.M. (1986). Women's ways of knowing: the development of self, voice and mind. New York.: Basic Books.

Bronfenbrenner, U. (1979). The ecology of human development: Experiments by nature and design. Harvard University Press. Massachusetts.

Brooks, A.K. (1989). Critically reflective learning within a corporate context (Doctoral dissertation. Teachers College. Columbia University. 1991), Dissertation Abstracts International, 50 ,(7).

Carr, C. (1991). Managing self-managed workers. Training and Development. 45, (9). 36-42.

Freire, P. (1970). Pedagogy of the oppressed. New York: Herder and Herder.

Greene, J.C., Caracelli, V.J. and Graham, W. (1989). Toward a conceptual framework for mixed-method evaluation designs. Educational Evaluation and Policy Analysis, 11, (3), 255-274.

Guba, E. and Lincoln, Y. (1989). Fourth generation evaluation. California: Sage.

Hall, L. (1991). Six elements for implementing and managing change. Leadership and Organization Development Journal. 12. (2), 24-26.

Hall, L. (1990). Can you picture that?. Training and Development Journal, 44, (9), 79-81. (from ABI/Inform Abstract 00514868).

Hart, J. (1993). Report of the Provost's task force on student service systems.

Helm, H. and Novak, J. (1983). Proceedings of the International Seminar Misconceptions in Science and Mathematics. NY. Cornell University, Department of Education.

Kotler, G. (1992). "Approaches to change". Training and Development. 46, (3), 41-42.

Kowalski, K.M. (1989). The components of empowerment from the perspective of successful leaders in business and education. (Doctoral dissertation, University of Pittsburgh), Dissertation Abstracts International, 51, (2).

Lee, C. (1993, February). The vision thing. Training. 25-34.

Lee, C. (1991). Followership: The essence of leadership. Training, 28, (1), 27-35. (From ABI/Inform Abstract 00533339).

Mezirow, Jack. (1990). "How critical reflection triggers transformative learning". In Mezirow, J. and Associates (eds), Fostering critical reflection in adulthood: A guide to transformative and emancipatory learning. San Francisco: Jossey-Bass.

Miles, M. B. and Ekholm, M. (1991). Will new structures stay restructured? Paper presented at the Annual Meeting of the American Educational Research Association (Chicago, IL. April 3-7, 1991).

Mink, O.G. (1992). Creating new organizational paradigms for change. International Journal of Quality and Reliability Management, 9, (3), 21-35.

Moses, M. (1991). The peak performance school: A visionary approach to school restructuring. Journal of School Leadership , 1, (3), 235-44.

Newsom-Stewart, M. (1993a). Development of an action research process to evaluate and implement a new vision in the Cornell Cooperative Extension 4-H Youth Development Program. Prepared for Proceedings of the Twentieth Annual National Agricultural Education Research Meeting. December 3. Nashville.

Newsom-Stewart, M. (1993). Developing shared meaning: Application of assimilation theory to 4-H, Cornell Cooperative Extension. Ph.D. dissertation. Cornell University.

Novak, J.D. (1977). A theory of education. New York. Cornell University Press.

Novak, J.D. (1990). A theory of education. 2nd Edition. Draft copy.

Patton, M.Q. (1990). Qualitative evaluation and research methods. (2nd edition). California: Sage.

Senge, P.M. (1990). The leader's new work: Building learning organizations. Sloan Management Review, (32), (1), 7-23.

Smallwood, N. (1990). Gaining a shared perspective. Executive Excellence. 7. (8), 10-11. (From ABI/Inform, Abstract 00518529).

Stufflebeam, D.L. and Shinkfield, A.J. (1985). Systematic evaluation. Kluwer Nijhoff Publishing. Boston.

Sutphin, H. D. and Newsom-Stewart, M. (1993). Development of an evaluation/ research model for tech prep. Report to New York State Tech Prep Conference "Options for Change". October 3, Syracuse.

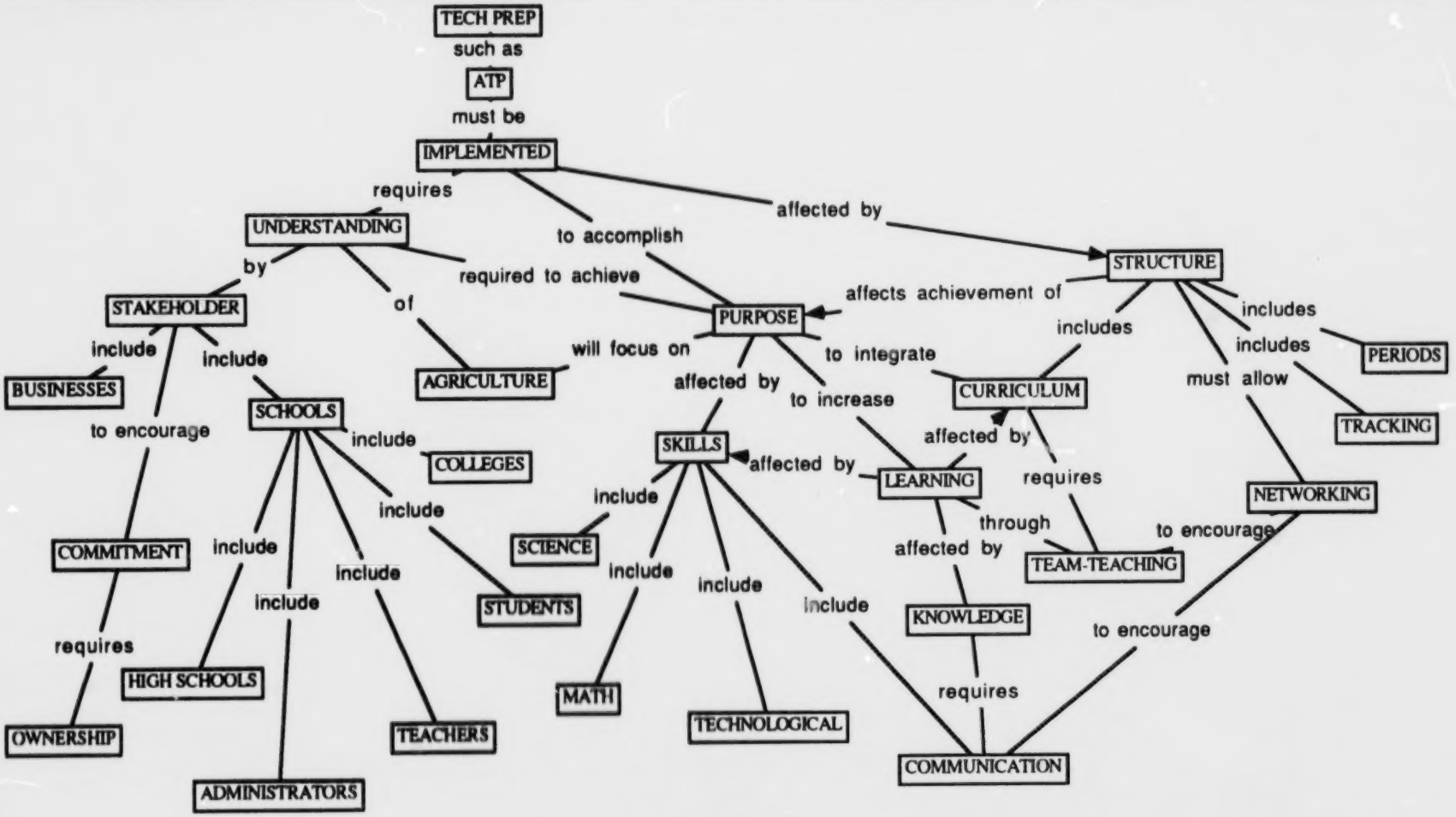
Sutphin, H. D. and Newsom-Stewart, M. (1992). Research and evaluation pilot report. Report of pilot study to Agri-Tech Prep/2000 Steering Committee. 100 pp.

Thompson, J.A. (1989). Bridge to the future: How elementary school principals share their visions. (Doctoral dissertation, Arizona State University). Dissertation Abstracts International, 48, (7).

Vygotsky, L.S. (1962). Thought and Language. M.I. T. Press. Massachusetts.

Appendix A
Interview Guides

Educators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Interview Guide: Teachers Administrators

Assessment of Implementation Status of the ATP Project: Preliminary Study.

NOTE TIME:
LOCATION:
RESPONDENT DESCRIPTION: (Include gender, position)

Introduction: This interview is being conducted as part of the evaluation of the ATP 2000 project. I am interested in assessing the status of the implementation of ATP and specifically in identifying any barriers to implementation which may exist. I am also interested in identifying perceptions of the role and purpose of ATP. Your response will be treated with confidence. I don't want to miss anything you say so I will be using a tape recorder and taking notes. If there's anything you want off the record or if you have any questions, please let me know. Do you have any questions?

Transition: I would like to begin by asking you some basic background information.

1. What is your job position and description? How are you involved in the ATP project?

Transition: We have been just talking about basic background information. I would like to start to focus the questions on your perceptions of tech prep and ATP, in particular.

2. What do you think the ATP project is trying to do? Is this the same thing you think it should be trying to do? Why or Why Not? (Probe for involvement with businesses, high schools and two year colleges) Is there anything that you think it should be trying to do that it is not (or that it shouldn't be trying to do and it is)

3. How would you describe the reaction of your school (or college) to the ATP Project?

4. What do you think the overall feeling is concerning the role of Agriculture in the Tech Prep project?

5. What do you feel that you, as an agriculture teacher, can bring to the project? What do you feel teachers of math, English and Science can bring? Have you talked to those teachers about the project? What do they feel they have to contribute?

Transition: We have been talking about perceptions of tech prep and agriculture which exist. I would like to talk specifically about any potential difficulties that exist in implementing ATP in your school (college, area) and any recommendations that you might have.

6. How well do you feel the ATP project is being implemented in your school (what is the status of the implementation?)

7. What structures or policies exist that might hamper implementation efforts? (Probe for periods, tracking, time for implementation, abilities for teachers to communicate and network, communication with other schools, businesses, existing attitudes concerning ATP).

8. If I were your fairy godmother and could give you three wishes concerning the ATP project, what would they be?

9. Is there anything else you could add that would better help us succesfully implement ATP?

Transition: We have been talking about your perceptions of the ATP project. Before we close, I would just like to ask you a personal question to assist me in data analysis.

10. What is your approximate age?
    a. 20-30
    b. 30-40
    c. 40-50
    d. 50-60
    e. Over 60

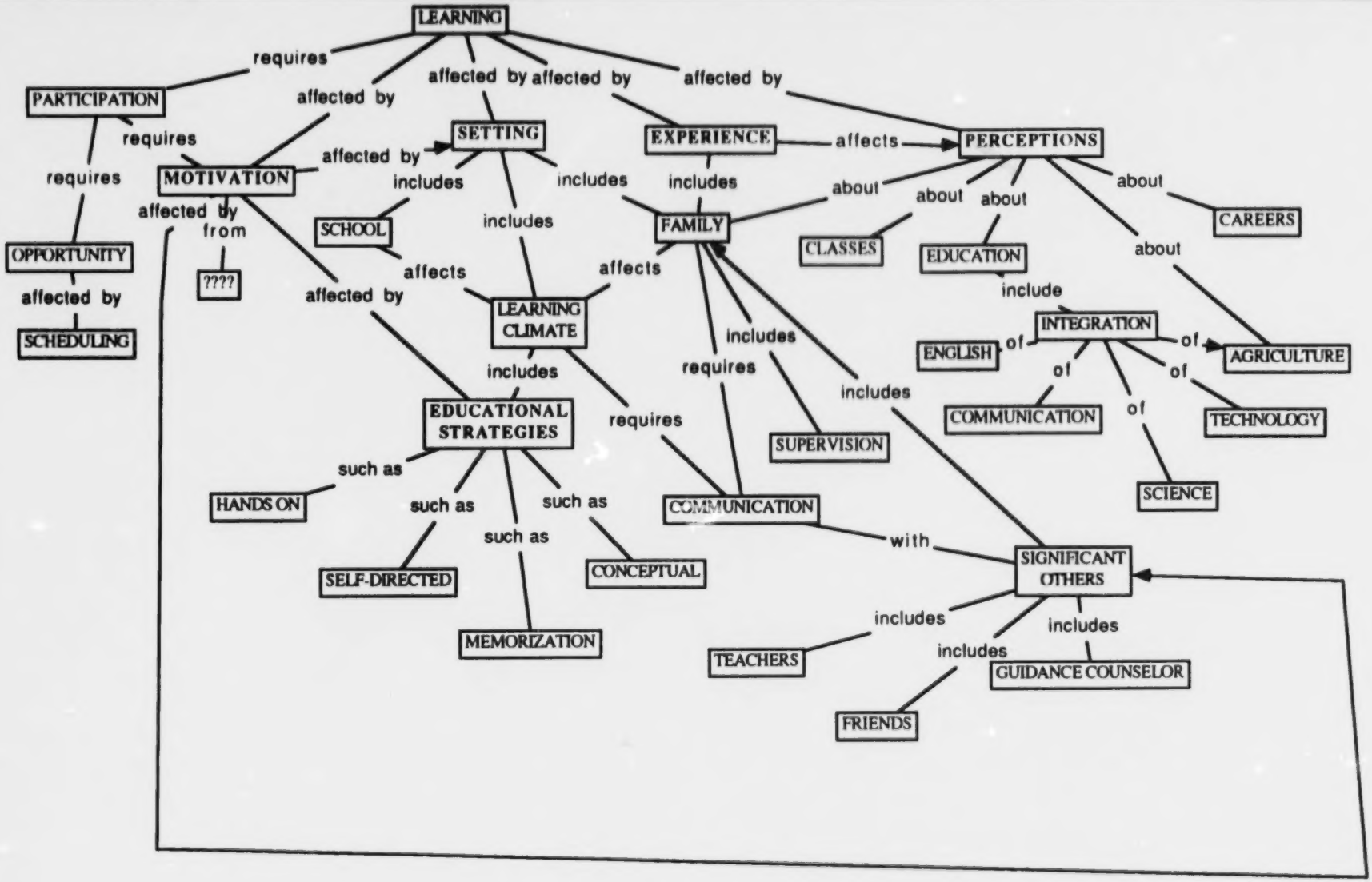
11. How long have you worked in this school?
    a. 0-5 years
    b. 6-10 years
    c. 11-15 years
    d. 16-20 years
    e. More than 20 years

Closure: Thank you so much for spending time to talk to me. The information you have provided will be useful. Do you have any questions regarding this interview or this study?

NOTE TIME:

Students

atps93intgstud



Interview Guide: Students

Assessment of Implementation Status of the ATP Project: Preliminary Study.

NOTE TIME:
LOCATION:
RESPONDENT DESCRIPTION: (Include gender, grade)

Introduction: I'm talking to a number of students to try to figure out how we can best develop classes that students will learn from and be interested in. I will be asking questions about your interests and educational experiences. Also, I will be asking a few questions about your family and friends in order to try to figure out who helps motivate students to learn. Your response will be treated with confidence. I don't want to miss anything you say so I will be using a tape recorder and taking notes. If there's anything you want off the record or if you have any questions, please let me know. Do you have any questions?

Transition: I would like to begin by asking you some basic background information.

1. What grade are you in?

2. What track are you involved in (regents, local diploma)?

3. What is your major? (Academic, vocational?) What types of courses have you taken? (ag, vocational, academic?)

4. How long have you been at this school?

5. What kinds of work do you do, at home, outside the home, paid, unpaid? Etc.

Transition: We have been just talking about basic background information. I would like to start to focus the questions on your ideas about school and classes, in particular.

6. Do you like school? What do you like or dislike about it? (Probe for safety, scheduling, classes, teachers, alcohol/drugs)

7. What are your favorite classes? Your worst? Why? What do you like or dislike about them?

8. When you think of agriculture classes, what do you think of? (Probe for status, what is meant by ag, what types of courses are included) Why? Where have you heard about agriculture? (TV, parents, friends) Why do you think someone would take agriculture classes? How do you feel about environmental science, business management, food science, aquaculture?

9. How do you think what you are learning in school might help you in the future? How do you find that material you have learned in one class might hel p you in another? (communication, ag, science, math, computers, etc.)

Transition: We've been talking about how you feel about school. I'd like to try to talk some about what types of things might help motivate you to learn or take a course.

10. When you decide to take a courses, what things do you consider? Who do you talk to? (probe for influence of significant others, critieria for college or work, friends, what you've heard about a course, reputation, teacher, high school requirements)

11. When you think of the teachers you have had that you learned the most from, how would you describe them, why did you like them? What about teachers that you have learned least from? Why?

12. When you think of the classes you have had that you learned the most from, how would you describe them? Why do you think you learned so much? Classes that you have learned least from? Why?

13. What types of things would you like to be able to learn about that you haven't yet? What types of courses would you like to see offered (probe for computers, science, communication, language, water quality, environmental, etc.)

14. What would you like to change about your school and your classes?

Transition: We've been talking about what types of things get you interested in classes. Now I'd like to try to find out what you would like to do with what you learn.

15. When you think about what you will do when you get out of high school, what types of jobs or careers do you usually think of? Why? What type of education/background does that type of job require? What types of jobs would you be least interested in? Why?

16. When you are trying to make decisions about your future, who do you talk to? Where do you get information? (probe for parents, guidance counselors, newspapers, etc.)

17. Are there places that you could go to get information that you haven't used? (Probe for businesses, etc.)

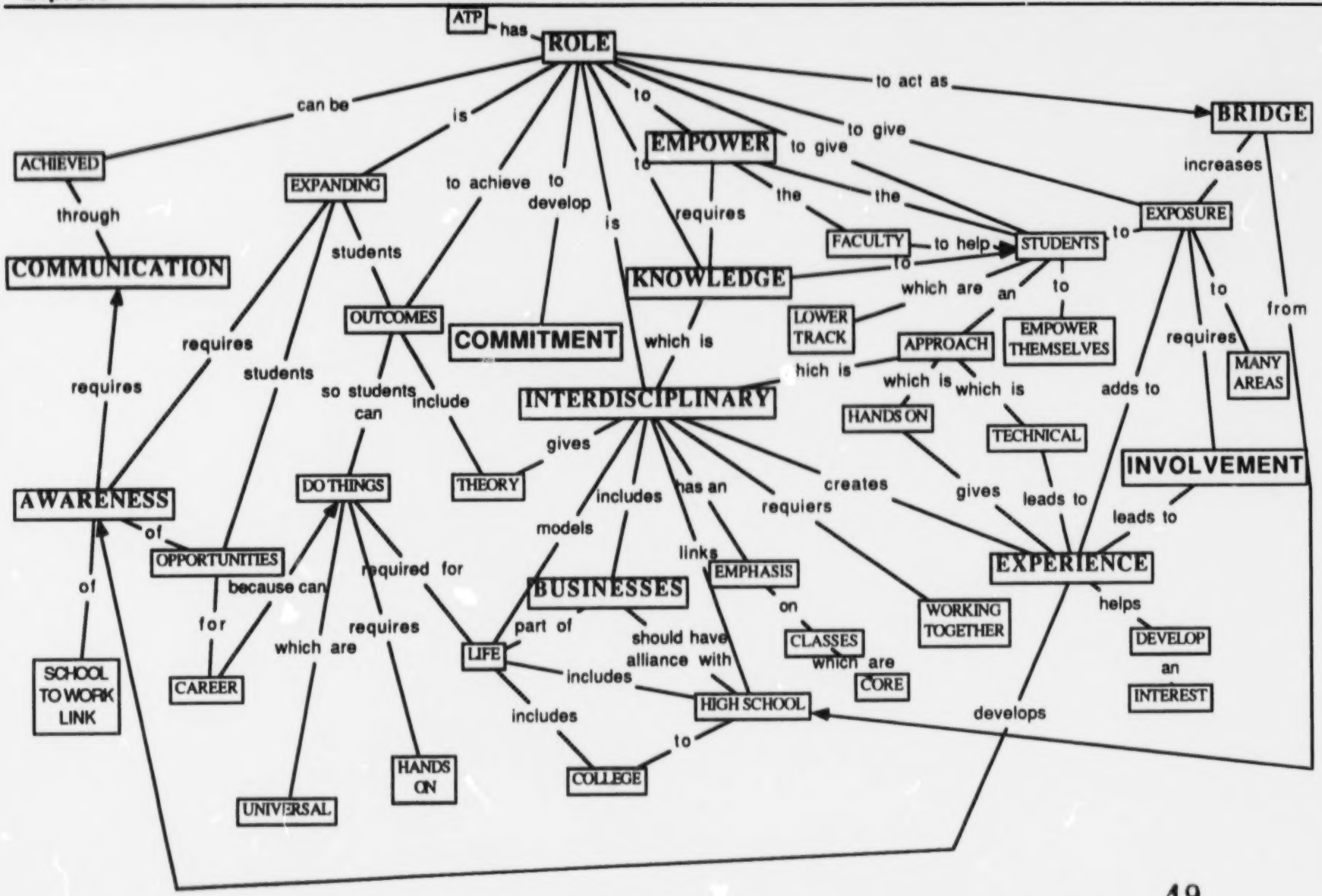
Closure: Thank you so much for spending time to talk to me. The information you have provided will be useful. Do you have any questions regarding this interview or this study?

NOTE TIME:

Appendix B
Summary Concept Maps

Educators

atprole


ATP
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ROLE
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is
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to act as
BRIDGE
ACHIEVED
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COMMUNICATION
EXPANDING
students
to achieve
to develop
is
EMPOWER
to give
to give
increases
EXPOSURE
requires
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the
FACULTY
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STUDENTS
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KNOWLEDGE
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to
LOWER TRACK
APPROACH
EMPOWER THEMSELVES
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MANY AREAS
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OUTCOMES
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HANDS ON
TECHNICAL
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gives
INVOLVEMENT
AWARENESS
of
DO THINGS
THEORY
includes
has an
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creates
gives
leads to
leads to
models
links
EXPERIENCE
OPPORTUNITIES
of
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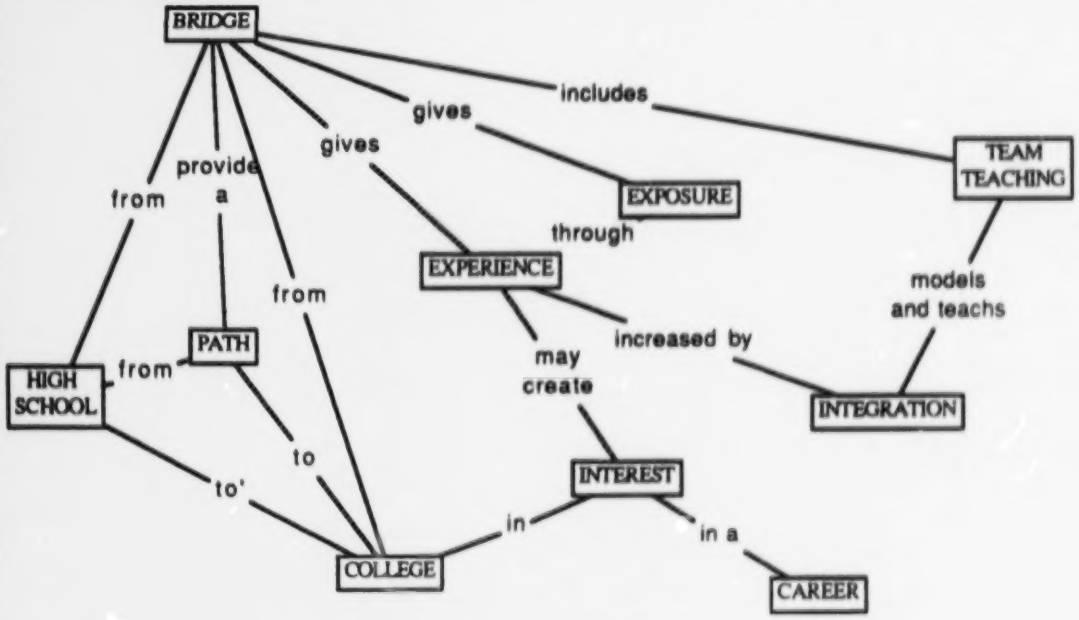
because can
required for
BUSINESSES
EMPHASIS
on
WORKING TOGETHER
helps
DEVELOP
an
INTEREST
SCHOOL TO WORK LINK
CAREER
which are
requires
part of
LIFE
should have alliance with
CLASSES
which are
CORE
includes
HIGH SCHOOL
includes
develops
to
UNIVERSAL
HANDS ON
COLLEGE

atpbridge


BRIDGE
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gives
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a
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from
EXPOSURE
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EXPERIENCE
TEAM
TEACHING
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and teachs
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may
create
PATH
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HIGH
SCHOOL
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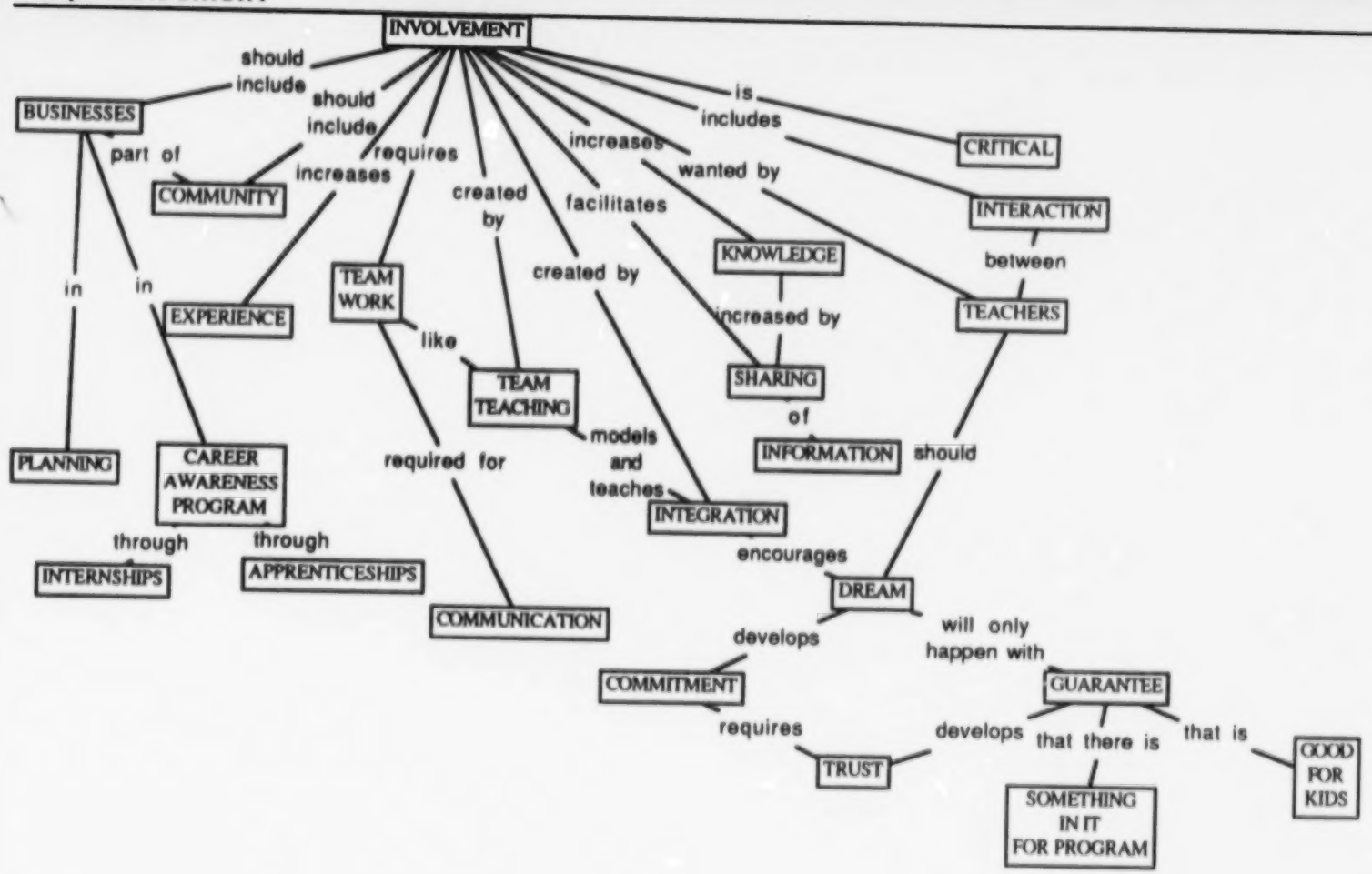
to'
INTEGRATION
INTEREST
in
in a
COLLEGE
CAREER

atpinvolvement



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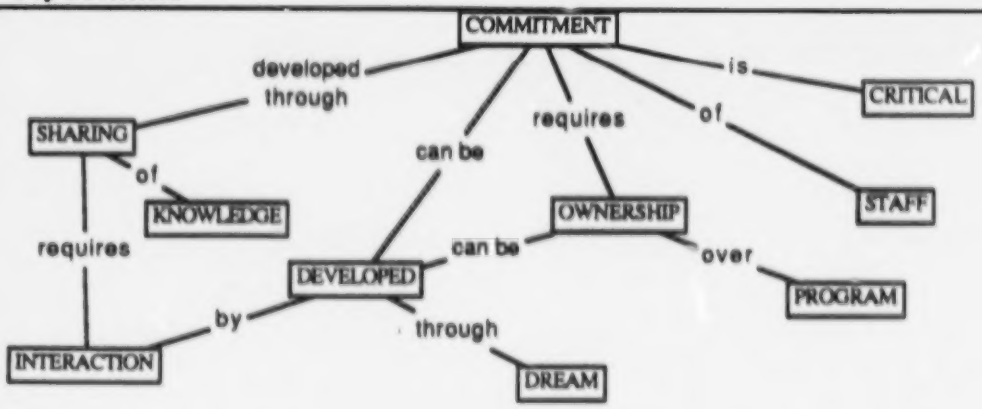
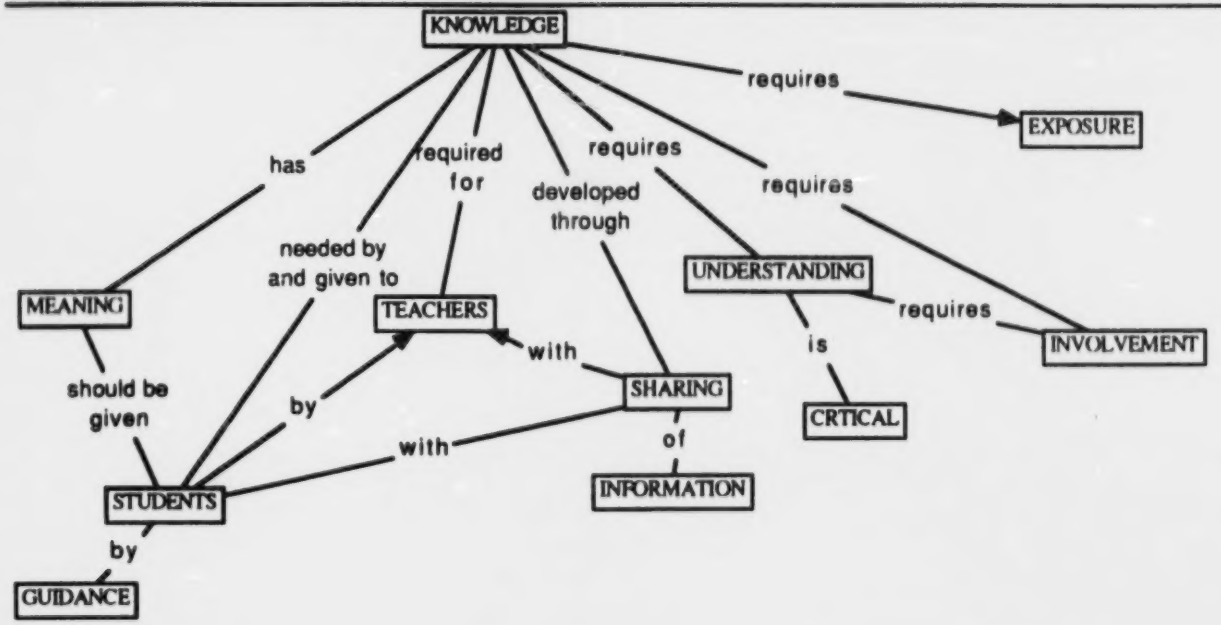
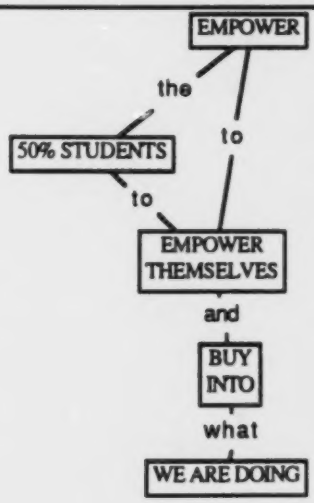

COMMITMENT
developed through
SHARING
of
KNOWLEDGE
requires
INTERACTION
by
can be
DEVELOPED
through
DREAM
requires
OWNERSHIP
can be
over
PROGRAM
of
STAFF
is
CRITICAL

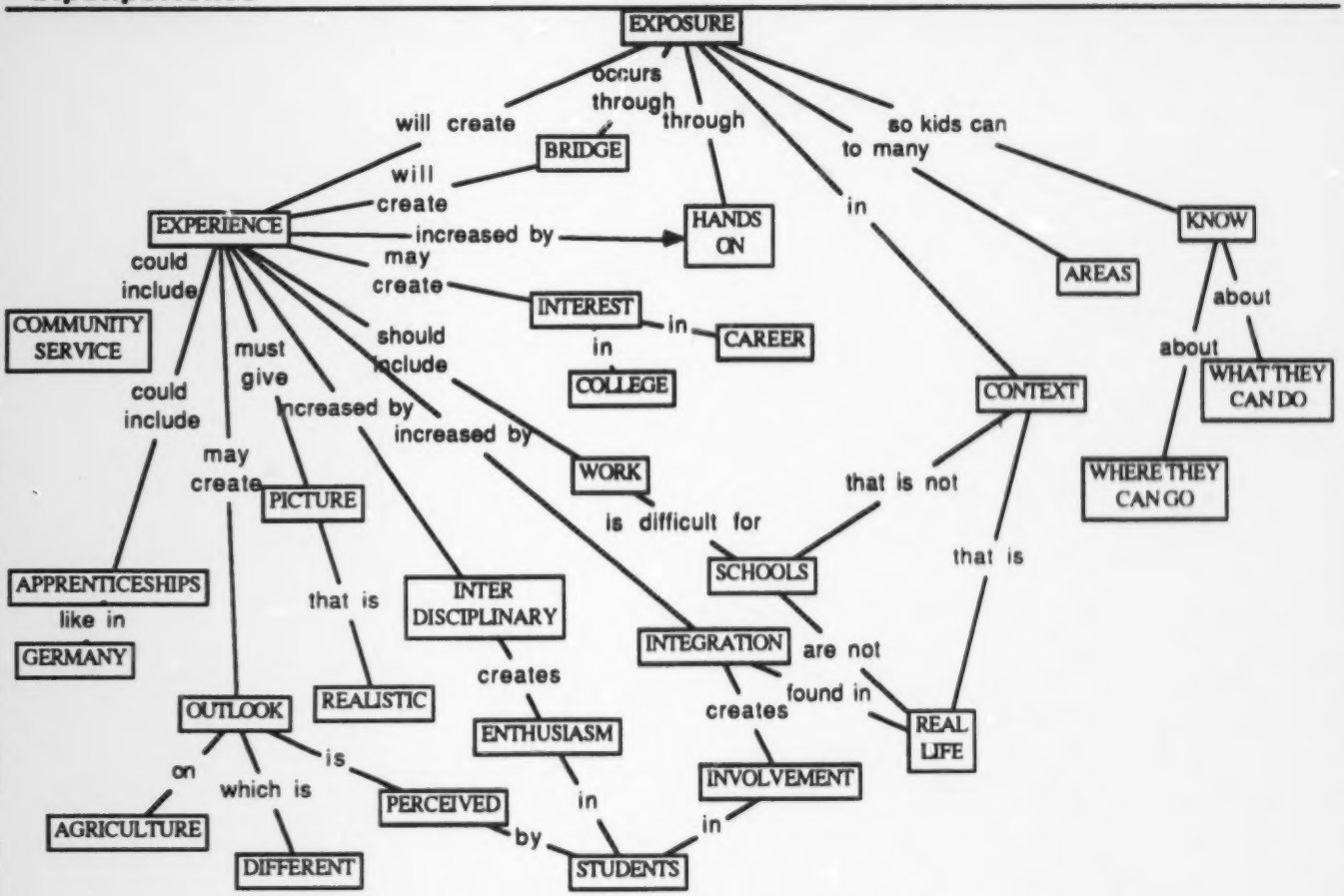
atpknow

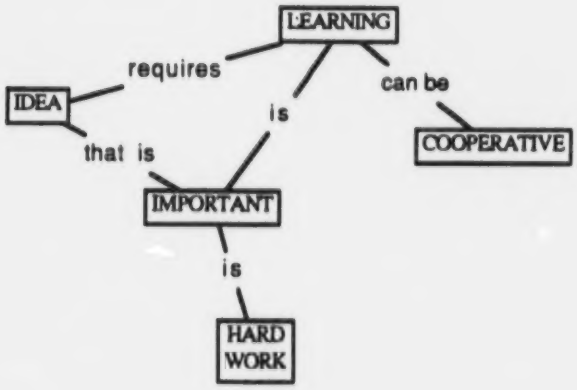

KNOWLEDGE
requires
EXPOSURE
has
required for
requires
developed through
requires
needed by and given to
UNDERSTANDING
requires
INVOLVEMENT
MEANING
TEACHERS
with
is
should be given
by
SHARING
CRTICAL
with
of
STUDENTS
INFORMATION
by
GUIDANCE

atpempower

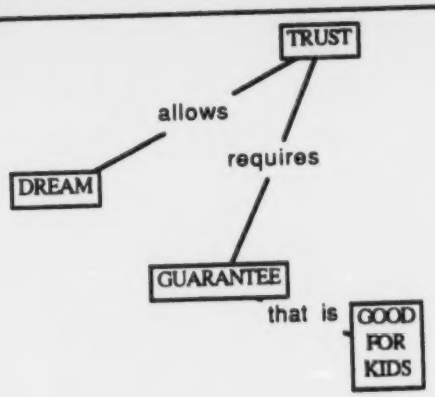

EMPOWER
the
to
50% STUDENTS
to
EMPOWER THEMSELVES
and
BUY INTO
what
WE ARE DOING

atpexperience

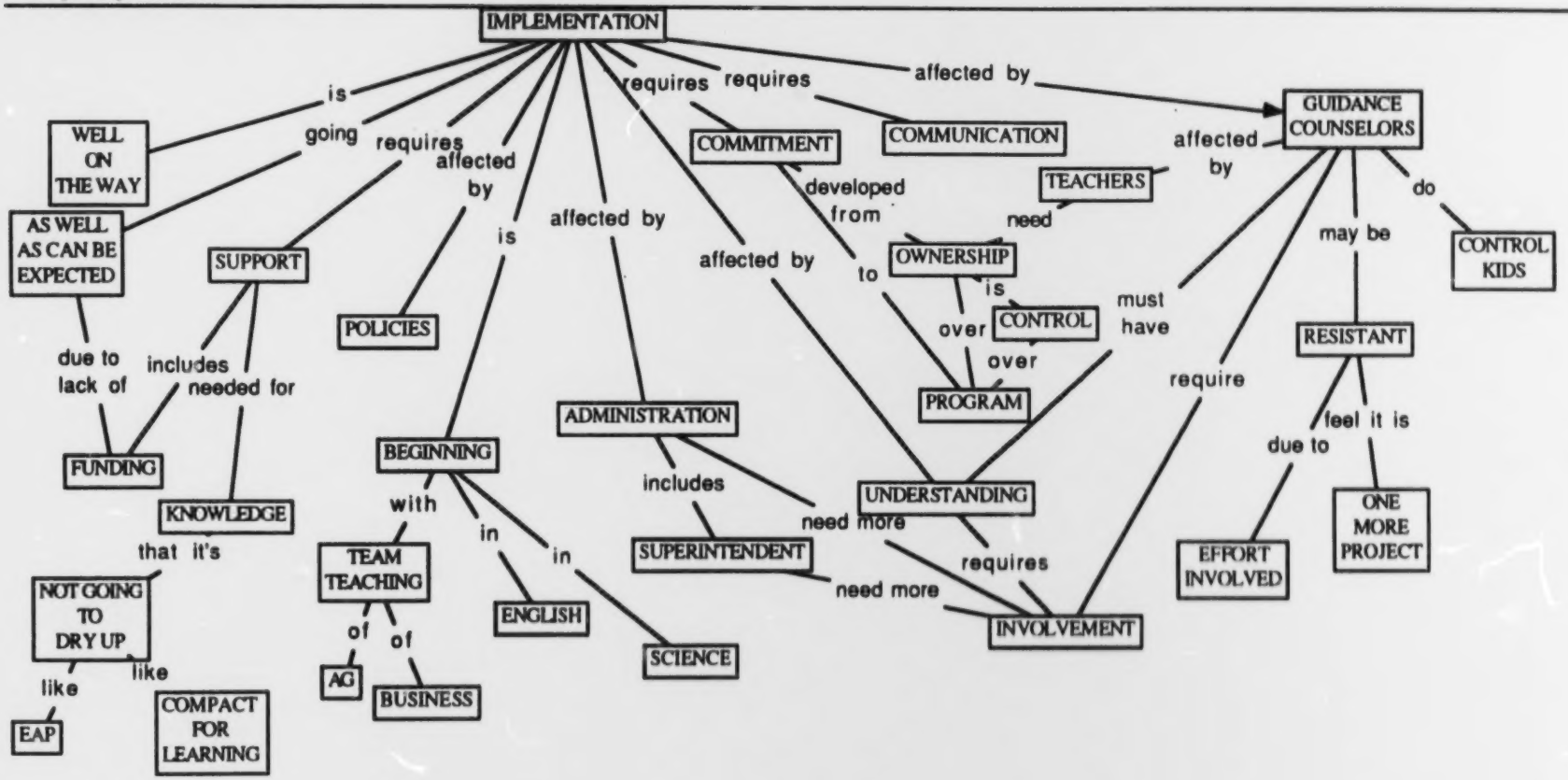



LEARNING
requires
IDEA
that is
is
can be
COOPERATIVE
IMPORTANT
is
HARD
WORK

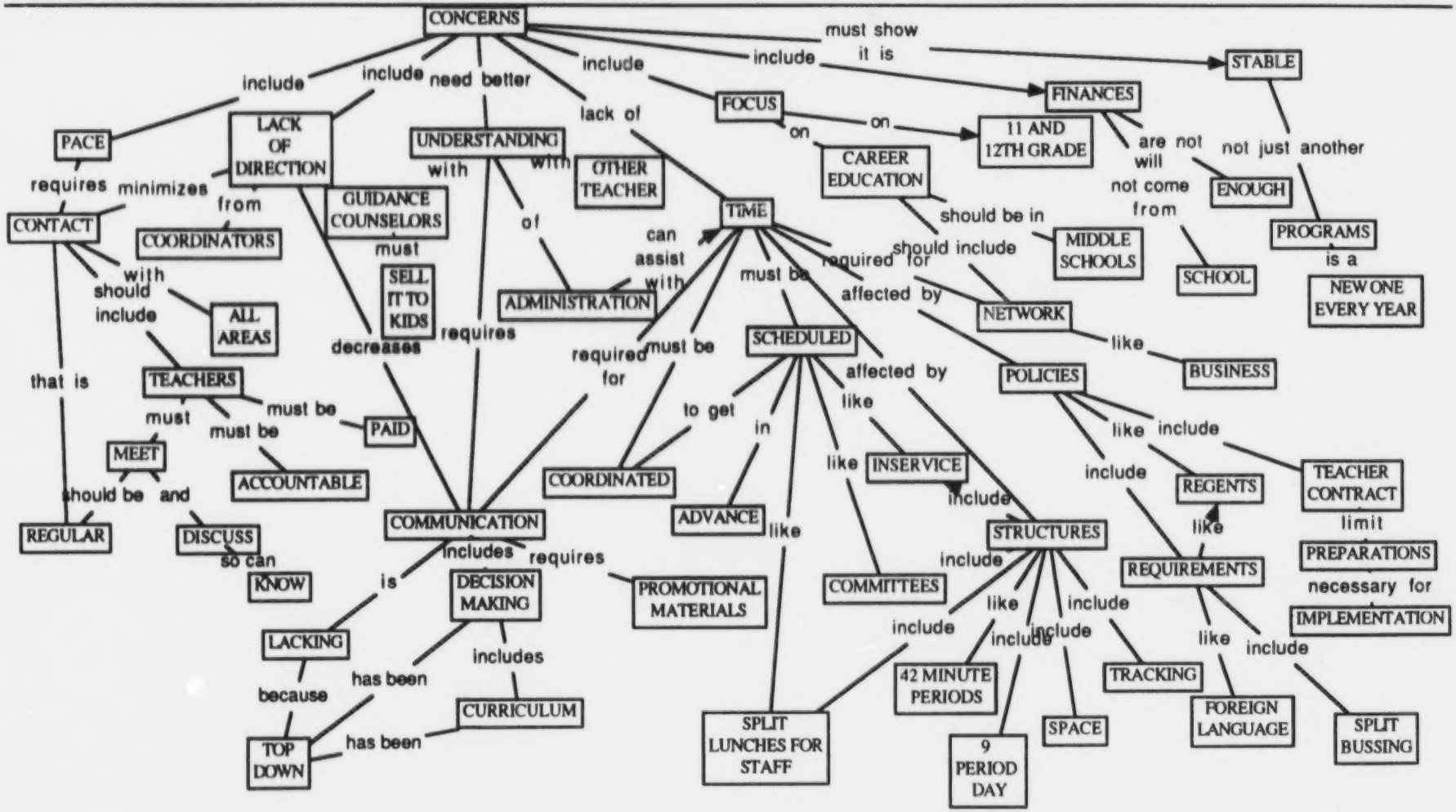
atptrust


TRUST
allows
requires
DREAM
GUARANTEE
that is
GOOD FOR KIDS

atpimplementation



IssuesConcerns



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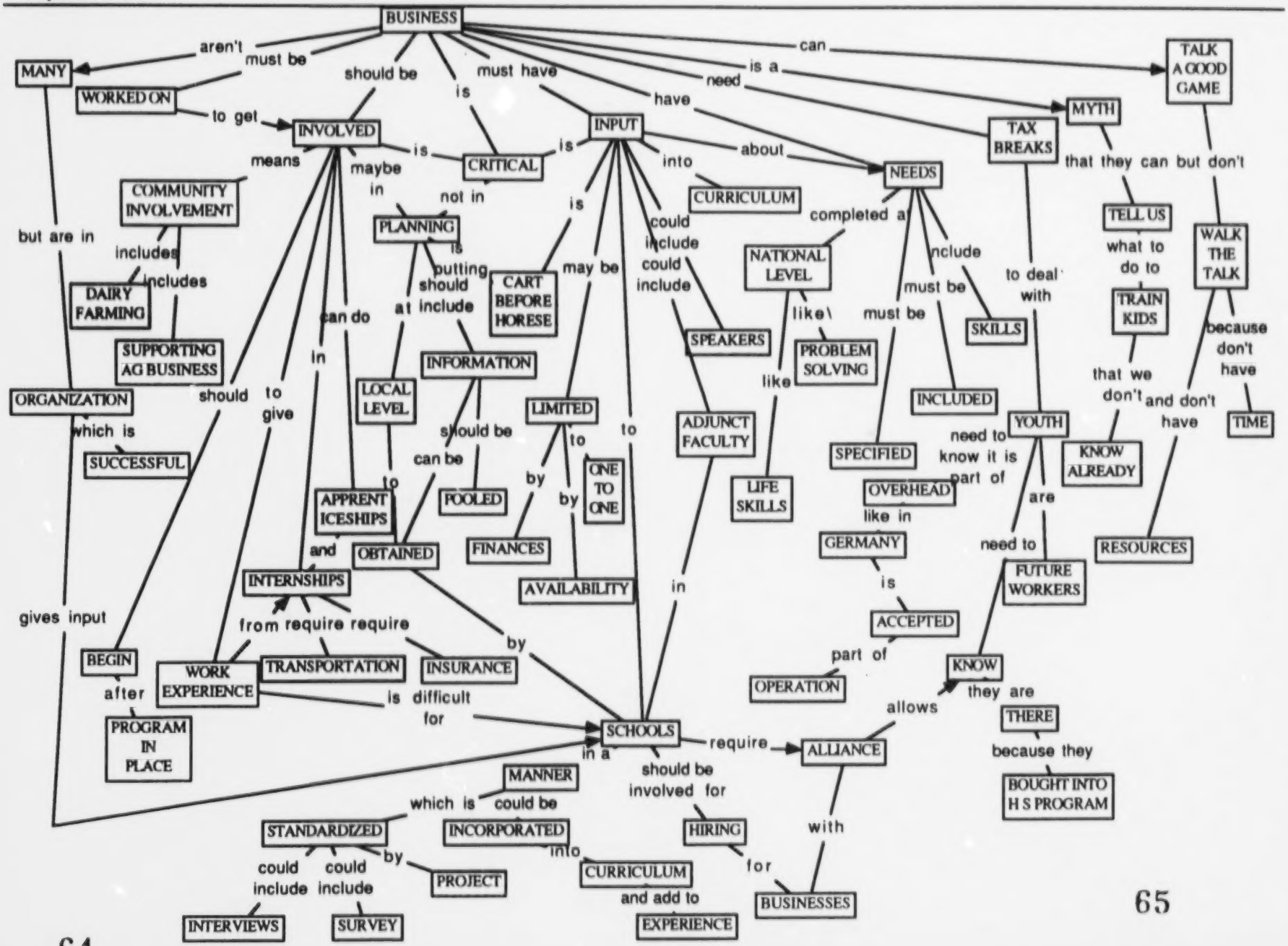
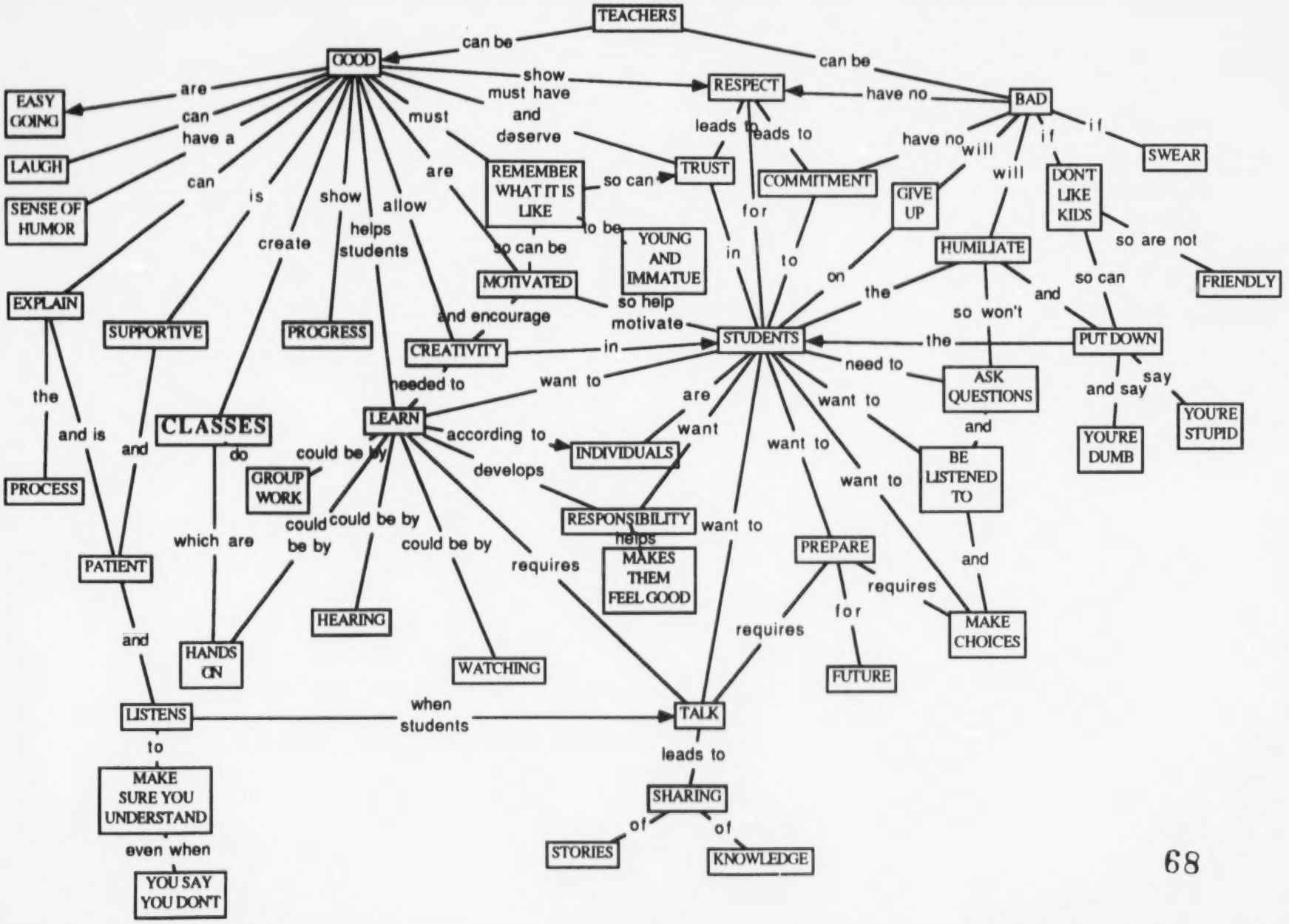
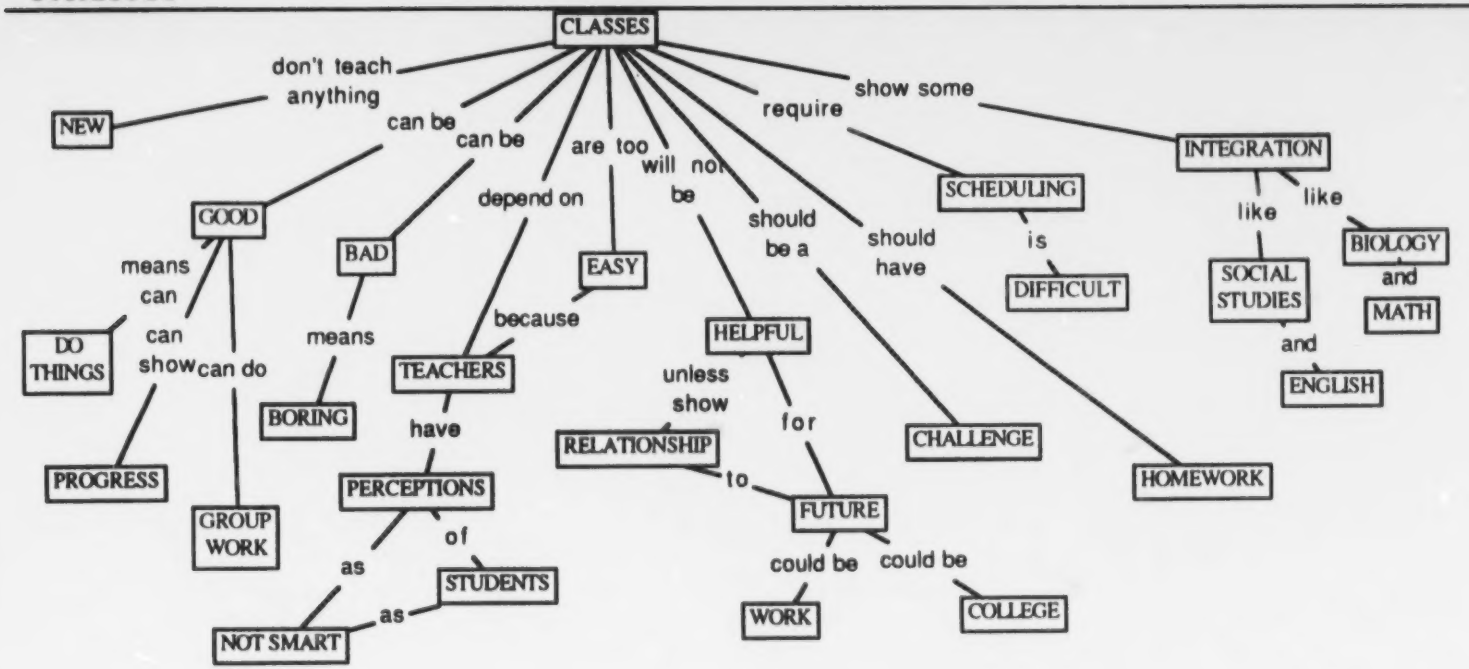


Students


TEACHERS
can be
GOOD
can be
BAD
show
must have
and
deserve
RESPECT
have no
are
EASY GOING
can have a
LAUGH
SENSE OF HUMOR
must
are
REMEMBER WHAT IT IS LIKE
so can
TRUST
leads to
leads to
COMMITMENT
have no
will
GIVE UP
if
will
SWEAR
if
DON'T LIKE KIDS
so are not
FRIENDLY
so can be
to be
YOUNG AND IMMATUE
MOTIVATED
so help
motivate
and encourage
CREATIVITY
in
STUDENTS
in
for
to
on
the
HUMILIATE
and
so won't
so can
PUT DOWN
the
need to
ASK QUESTIONS
and say
say
YOU'RE DUMB
YOU'RE STUPID
can
is
create
show
helps students
allow
EXPLAIN
SUPPORTIVE
PROGRESS
CLASSES
the
and is
PROCESS
and
PATIENT
which are
do
could be by
GROUP WORK
could be by
could be by
could be by
HEARING
WATCHING
HANDS ON
and
LISTENS
to
MAKE SURE YOU UNDERSTAND
even when
YOU SAY YOU DON'T
LEARN
needed to
want to
according to
INDIVIDUALS
develops
RESPONSIBILITY
helps
MAKES THEM FEEL GOOD
requires
are
want
want to
want to
want to
want to
want to
BE LISTENED TO
and
PREPARE
requires
for
FUTURE
and
requires
MAKE CHOICES
when students
TALK
leads to
SHARING
of
of
STORIES
KNOWLEDGE

stclasses


CLASSES
don't teach anything
NEW
can be
GOOD
means
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DO THINGS
can show
PROGRESS
can do
GROUP WORK
can be
BAD
means
BORING
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TEACHERS
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PERCEPTIONS
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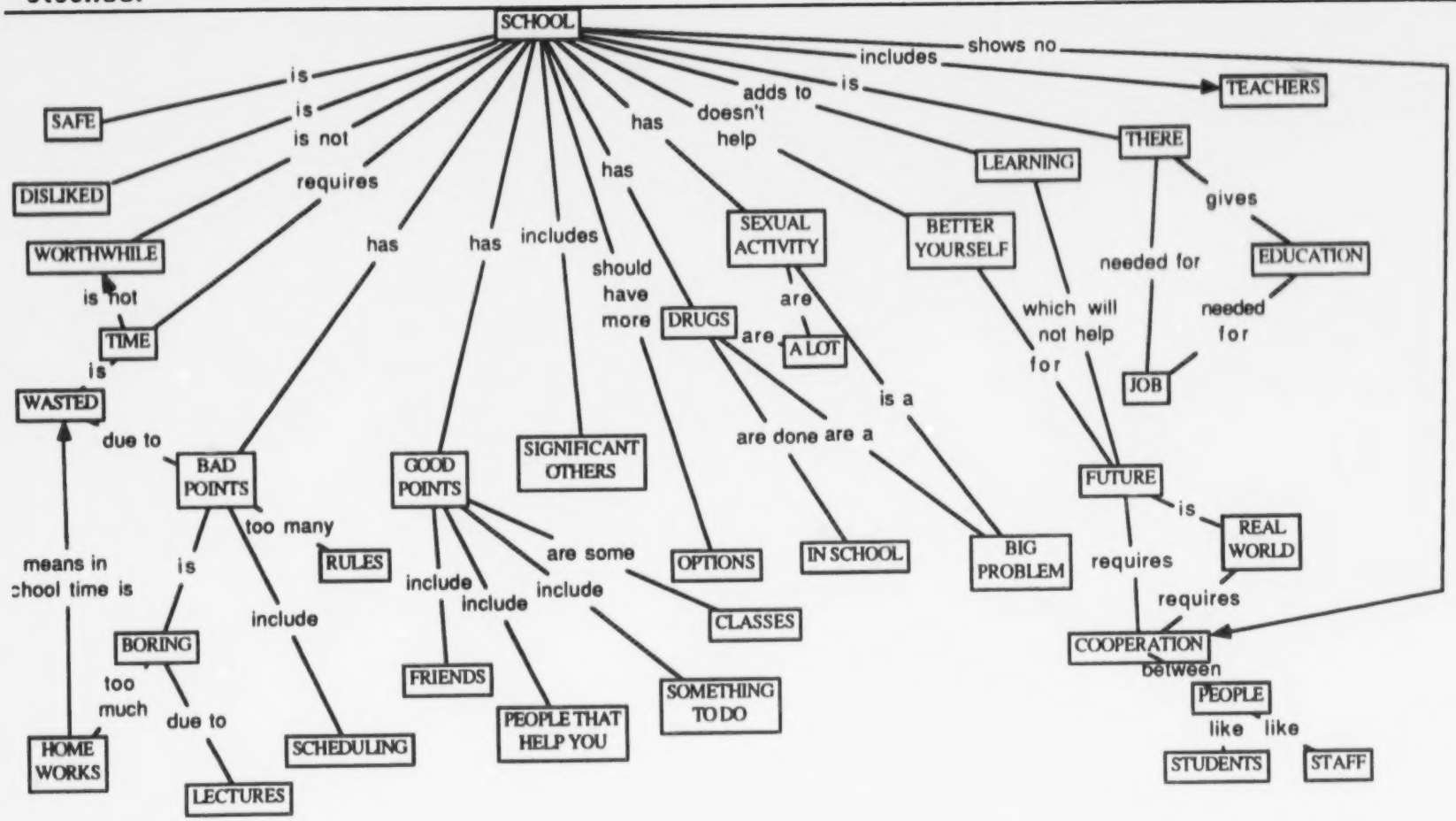
as
STUDENTS
as
NOT SMART
are too
EASY
will not be
HELPFUL
unless show
RELATIONSHIP
for
to
FUTURE
could be
WORK
could be
COLLEGE
should be a
CHALLENGE
require
show some
should have
HOMEWORK
SCHEDULING
is
DIFFICULT
INTEGRATION
like
like
SOCIAL STUDIES
and
ENGLISH
BIOLOGY
and
MATH

stschool


SCHOOL
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SAFE
is
is not
DISLIKED
requires
WORTHWHILE
is not
TIME
is
WASTED
means in school time is
has
due to
BAD POINTS
too many
RULES
is
include
BORING
too much
due to
HOME WORKS
LECTURES
SCHEDULING
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GOOD POINTS
include
include
include
are some
FRIENDS
PEOPLE THAT HELP YOU
SOMETHING TO DO
CLASSES
includes
SIGNIFICANT OTHERS
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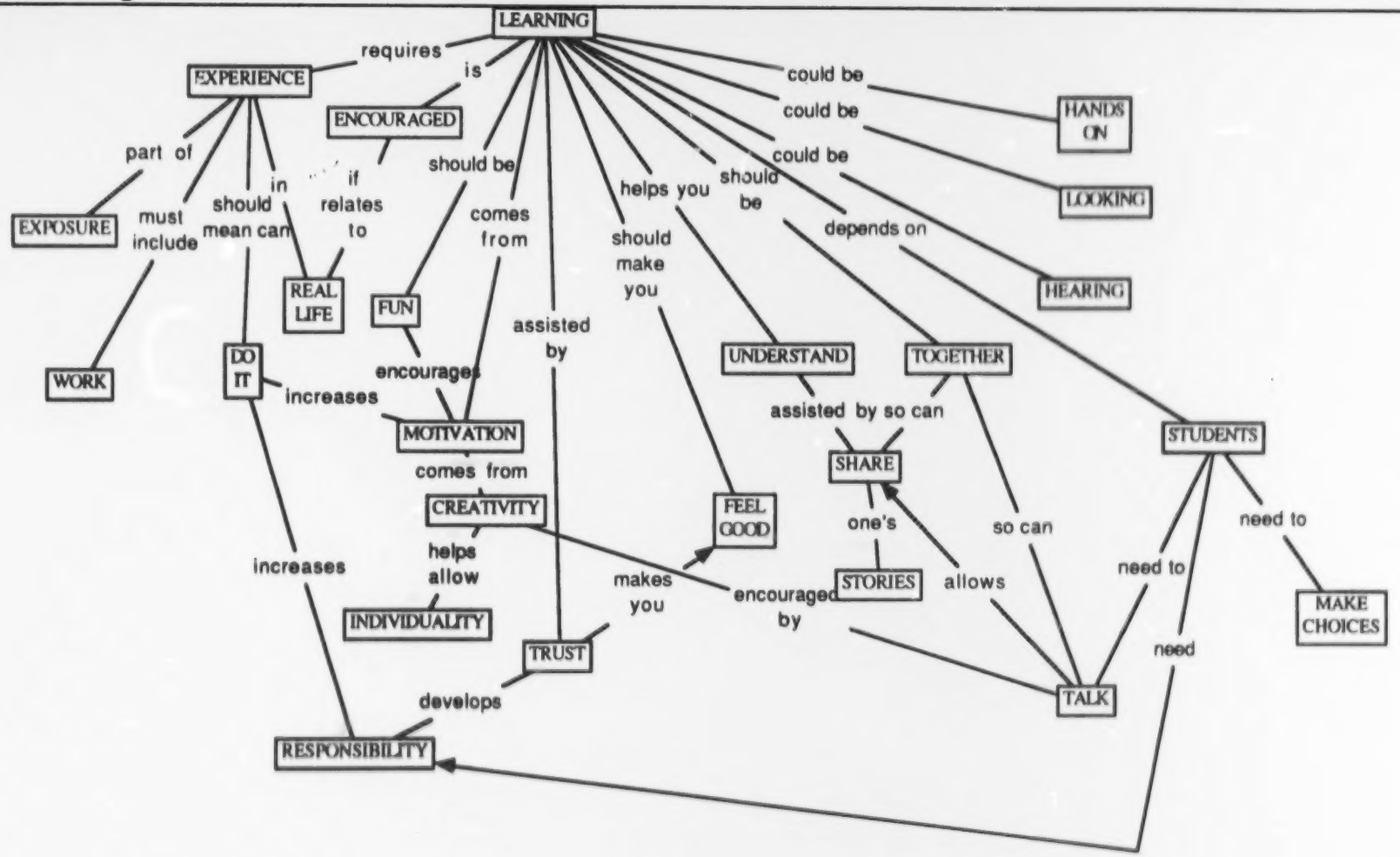
should have more
OPTIONS
has
doesn't help
DRUGS
are
A LOT
are done are a
IN SCHOOL
SEXUAL ACTIVITY
are
is a
BIG PROBLEM
adds to
BETTER YOURSELF
for
is
LEARNING
which will not help
for
FUTURE
requires
requires
COOPERATION
between
PEOPLE
like
like
STUDENTS
STAFF
includes
shows no
is
TEACHERS
THERE
gives
EDUCATION
needed for
needed for
JOB
is
REAL WORLD


LEARNING
requires
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could be
could be
could be
could be
EXPERIENCE
ENCOURAGED
HANDS ON
LOOKING
HEARING
part of
must include
should mean can
in
if relates to
should be
comes from
helps you
should be
should make you
depends on
EXPOSURE
WORK
REAL LIFE
FUN
DO IT
assisted by
UNDERSTAND
TOGETHER
STUDENTS
increases
encourages
assisted by so can
MOTIVATION
comes from
SHARE
CREATIVITY
FEEL GOOD
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need to
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STORIES
allows
MAKE CHOICES
INDIVIDUALITY
TRUST
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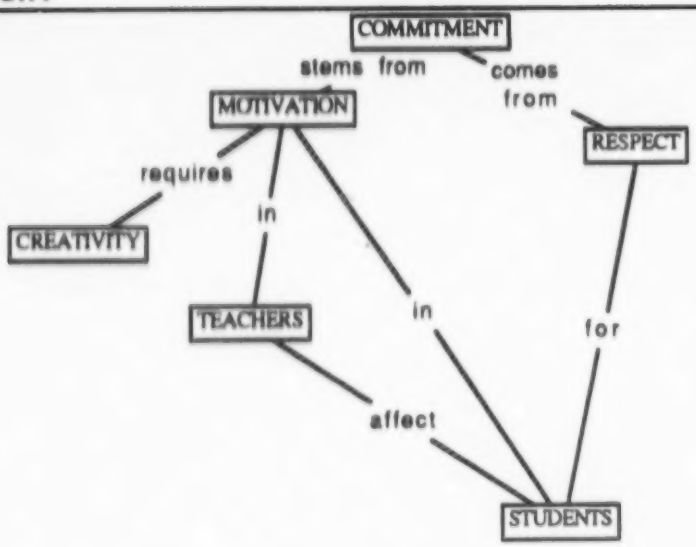
develops
TALK
RESPONSIBILITY

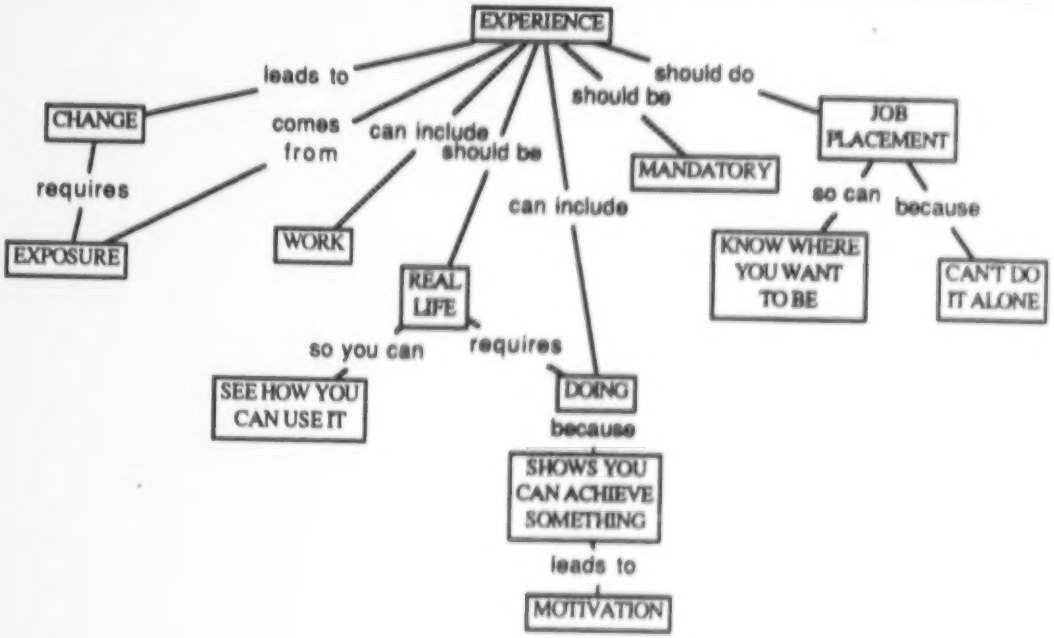
stcommitment



sttrust

TRUST
requires
BELIEF IN STUDENTS
should not treat
WHOLE GROUP AS ONE
encourages
LEARNING
leads to
UNDERSTANDING
encourages
encourages
COMMUNICATION
makes you
RESPONSIBILITY
FEEL GOOD

stexperience



stperceptionsfrm